PIONEER®
The Art of Entertainment

Service Manual

• KEH-P424/X1M/UC

ORDER NO.
CRT2169

MULTI-CD CONTROL HIGH POWER CASSETTE PLAYER WITH FM/AM TUNER

KEH-P424 X1M/UC
KEH-P4700 X1M/UC
KEH-P4750 X1M/ES

NOTE:

- **See the separate manual CX-631(CRT1640) for the cassette mechanism description.**
- **The cassette mechanism assy employed in this model is one of 2L series.**
- **Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.**
- **This service manual does not describe the CD test mode.**
  For the operations in the CD test mode, refer to the CD player's Service Manual.

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K-ZEM. FEB. 1998 Printed in Japan

1. SAFETY INFORMATION

UC model

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.
If you are not qualified to perform the repair of this product properly and safely, you should mot risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health and Safety Code, Section 25249.5). When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING

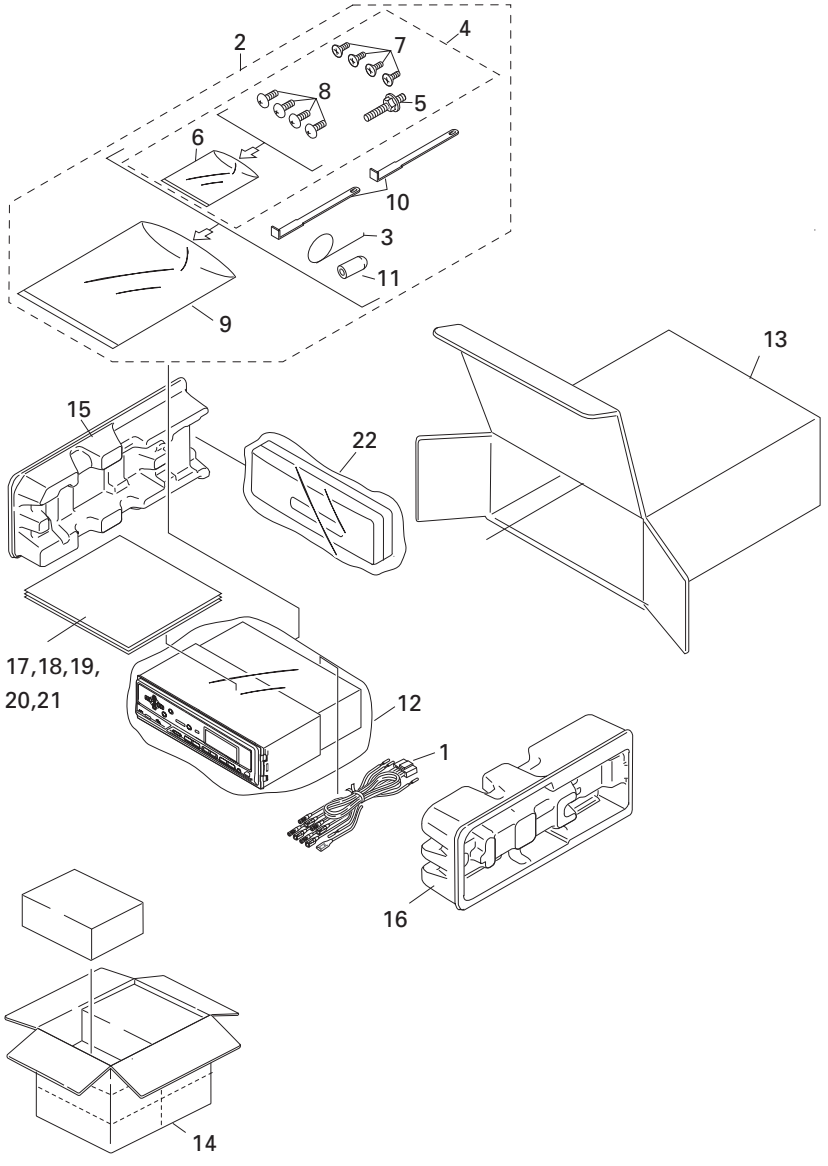


Fig. 1

NOTE:

- **Parts marked by "*"and ⊗ can not be supplied.**
- Screws adjacent to ∇ mark on the product are used for disassembly.

● PACKING SECTION PARTS LIST

Mark	No.	Description	Part No. KEH-P424/X1M/UC	Part No. KEH-P4700/X1M/UC	Part No. KEH-P4750/X1M/ES
	1	Cord Assy	CDE5496	CDE5496	CDE5496
*	2	Accessory Assy	CEA2350	CEA2350	CEA2350
	3	Spring	CBH1650	CBH1650	CBH1650
	4	Screw Assy	CEA2351	CEA2351	CEA2351
	5	Screw	CBA1304	CBA1304	CBA1304
*	6	Polyethylene Bag	CEG-127	CEG-127	CEG-127
	7	Screw(x4)	CRZ50P090FMC	CRZ50P090FMC	CRZ50P090FMC
	8	Screw(x4)	TRZ50P080FMC	TRZ50P080FMC	TRZ50P080FMC
*	9	Polyethylene Bag	CEG-158	CEG-158	CEG-158
	10	Handle(x2)	CNC5395	CNC5395	CNC5395
	11	Bush	CNV3930	CNV3930	CNV3930
	12	Polyethylene Bag	CEG1173	CEG1173	CEG1-162
	13	Carton	CHG3471	CHG3470	CHG3472
	14	Contain Box	CHL3471	CHL3470	CHL3472
	15	Protector	CHP2021	CHP2021	CHP2021
	16	Protector	CHP2022	CHP2022	CHP2022
	17	Owner's Manual	CRD2585	CRD2587	CRD2596
	18	Installation Manual	CRD2586	CRD2588	CRD2598
*	19	Warranty Card	CRY1070	Not used	Not used
*	20	Card	Not used	ARY1048	Not used
	21	Owner's Manual	Not used	Not used	CRD2597
	22	Case Assy	CXB1063	CXB1063	CXB1063

● Owner's Manual, Installation Manual

Model	Part No.	Language
KEH-P424/X1M/UC	CRD2585	English, French
	CRD2586	English, French
KEH-P4700/X1M/UC	CRD2587	English, French, Spanish
	CRD2588	English, French, Spanish
KEH-P4750/X1M/ES	CRD2596	English, Spanish, Portuguese
	CRD2597	Chinese, Arabic
	CRD2598	English, Spanish, Portuguese, Chinese, Arabic

2.2 EXTERIOR

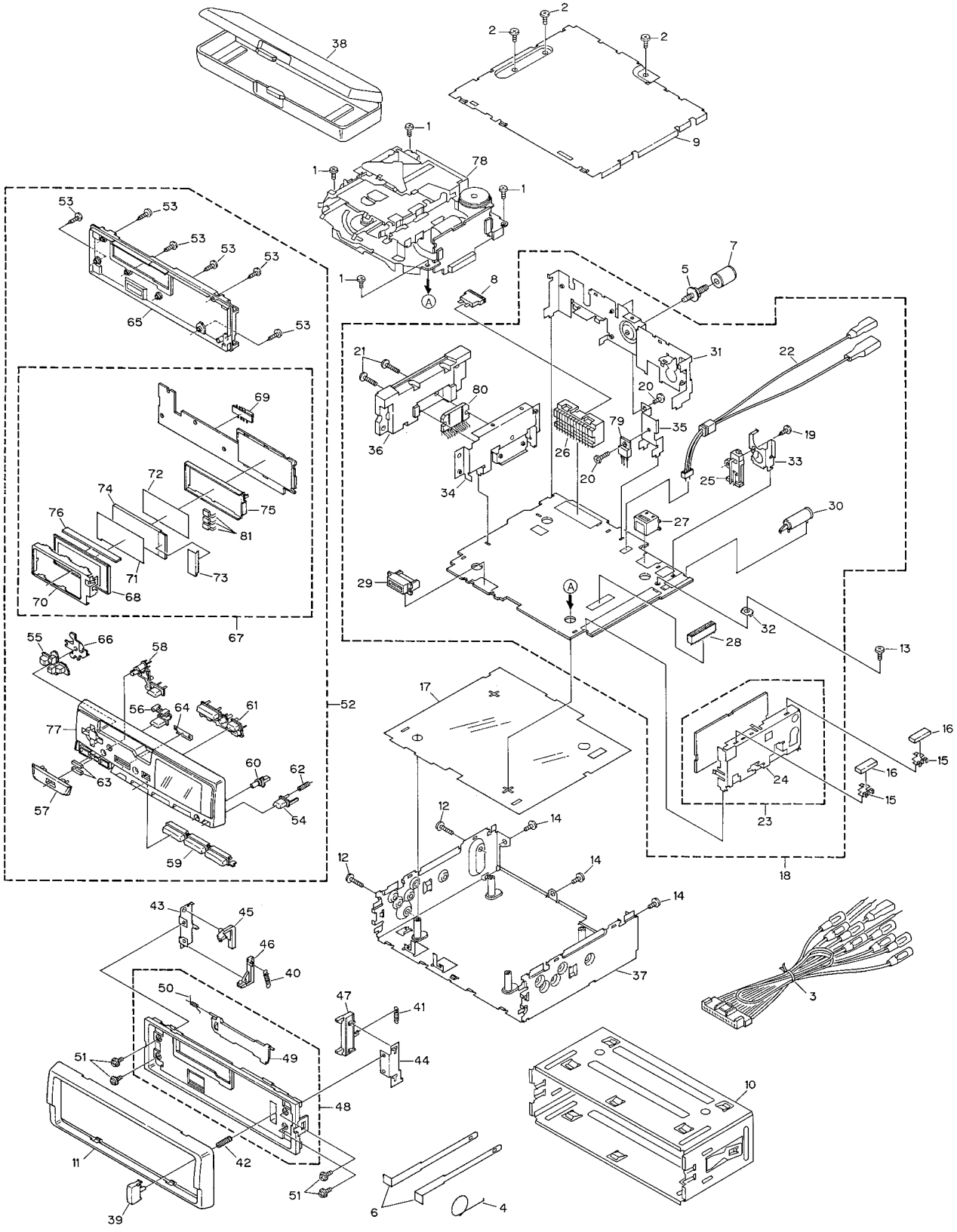


Fig. 2

(1) EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Screw	BSZ26P050FMC
	2	Screw	BSZ30P060FMC
	3	Cord Assy	CDE5496
	4	Spring	CBH1650
	5	Screw	CBA1304
	6	Handle	CNC5395
	7	Bush	CNV3930
	8	Fuse	CEK1136
	9	Case	CNB2283
	10	Holder	CNC6798
	11	Panel	CNS4200
	12	Screw	BMZ30P100FMC
	13	Screw	BSZ30P055FUC
	14	Screw	BSZ30P060FMC
	15	Holder Unit	CXB2687
	16	Cushion	CNM4870
	17	Insulator	CNM5571
⊗	18	Tuner Amp Unit	See Contrast table(2)
	19	Screw	BPZ26P080FMC
	20	Screw	BSZ26P080FMC
	21	Screw	BSZ26P140FMC
	22	Cord Assy(CN603)	See Contrast table(2)
	23	FM/AM Tuner Unit	See Contrast table(2)
	24	Holder	CNC6554
	25	Pin Jack(CN301)	CKB1028
	26	Plug(CN951)	CKM1270
	27	Connector(CN751)	CKS3408
	28	Connector(CN602)	CKS3568
	29	Connector(CN601)	CKS3581
	30	Antenna Jack(CN402)	CKX1056
	31	Panel	CNB2256
	32	Holder	CNC5399
	33	Holder	CNC6531
	34	Holder	CNC6674
	35	Holder	CNC6845
	36	Heat Sink	CNR1426
	37	Chassis Unit	CXB2347
	38	Case Assy	CXB1063
	39	Button	CAC4836
	40	Spring	CBH1834
	41	Spring	CBH1835
	42	Spring	CBH1996
	43	Bracket	CNC6135
	44	Bracket	CNC6791
	45	Arm	CNV4692

Mark	No.	Description	Part No.
	46	Arm	CNV4693
	47	Arm	CNV4728
	48	Panel Unit	See Contrast table(2)
	49	Door	CAT1947
	50	Spring	CBH1838
	51	Screw	IMS20P030FZK
	52	Detach Grille Assy	See Contrast table(2)
	53	Screw	BPZ20P100FZK
	54	Button(⏢)	CAC5430
	55	Button(▲,▼ ,◄,►)	CAC5431
	56	Button(SOURCE)	CAC5433
	57	Button(+,–)	CAC5435
	58	Button(BAND,F,A)	CAC5437
	59	Button(1,2,3,4,5,6)	CAC5439
	60	Button(D)	CAC5441
	61	Button(LD/CLK,P,⏏)	CAC5542
	62	Spring	CBH2103
	63	Spacer	CNM5572
	64	Sheet	CNM5897
	65	Cover	CNS4775
	66	Lighting Conductor	CNV5195
	67	Keyboard Unit	CWM5801
	68	LCD(LCD901)	CAW1477
	69	Connector(CN901)	CKS3580
	70	Holder	CNC7479
	71	Sheet	CNM5726
	72	Sheet	CNM5727
	73	Sheet	CNM5728
	74	Lighting Conductor	CNV5196
	75	Housing	CNV5197
	76	Connector	CNV5205
	77	Grille Unit	See Contrast table(2)
	78	Cassette Mechanism Module	EXK3615
	79	Transistor(Q951)	2SD2396
	80	IC(IC301)	See Contrast table(2)
	81	LED(D903 — 905)	NSPWF50SB

(2) CONTRAST TABLE

KEH-P424/X1M/UC, KEH-P4700/X1M/UC and KEH-P4750/X1M/ES are constructed the same except for the following:

Mark No.	Symbol and Description	Part No. KEH-P424/X1M/UC	KEH-P4700/X1M/UC	KEH-P4750/X1M/ES
⊗	18 Tuner Amp Unit	CWM5847	CWM5836	CWM5800
	22 Cord Assy(CN603)	CDE5178	Not used	Not used
	23 FM/AM Tuner Unit	CWE1467	CWE1467	CWE1486
	48 Panel Unit	CXB2352	CXB2367	CXB2367
	52 Detach Grille Assy	CXB2446	CXB2442	CXB2308
	77 Grille Unit	CXB2491	CXB2490	CXB2492
	80 IC(IC301)	TDA7386	TDA7384	TDA7384

2.3 CASSETTE MECHANISM MODULE

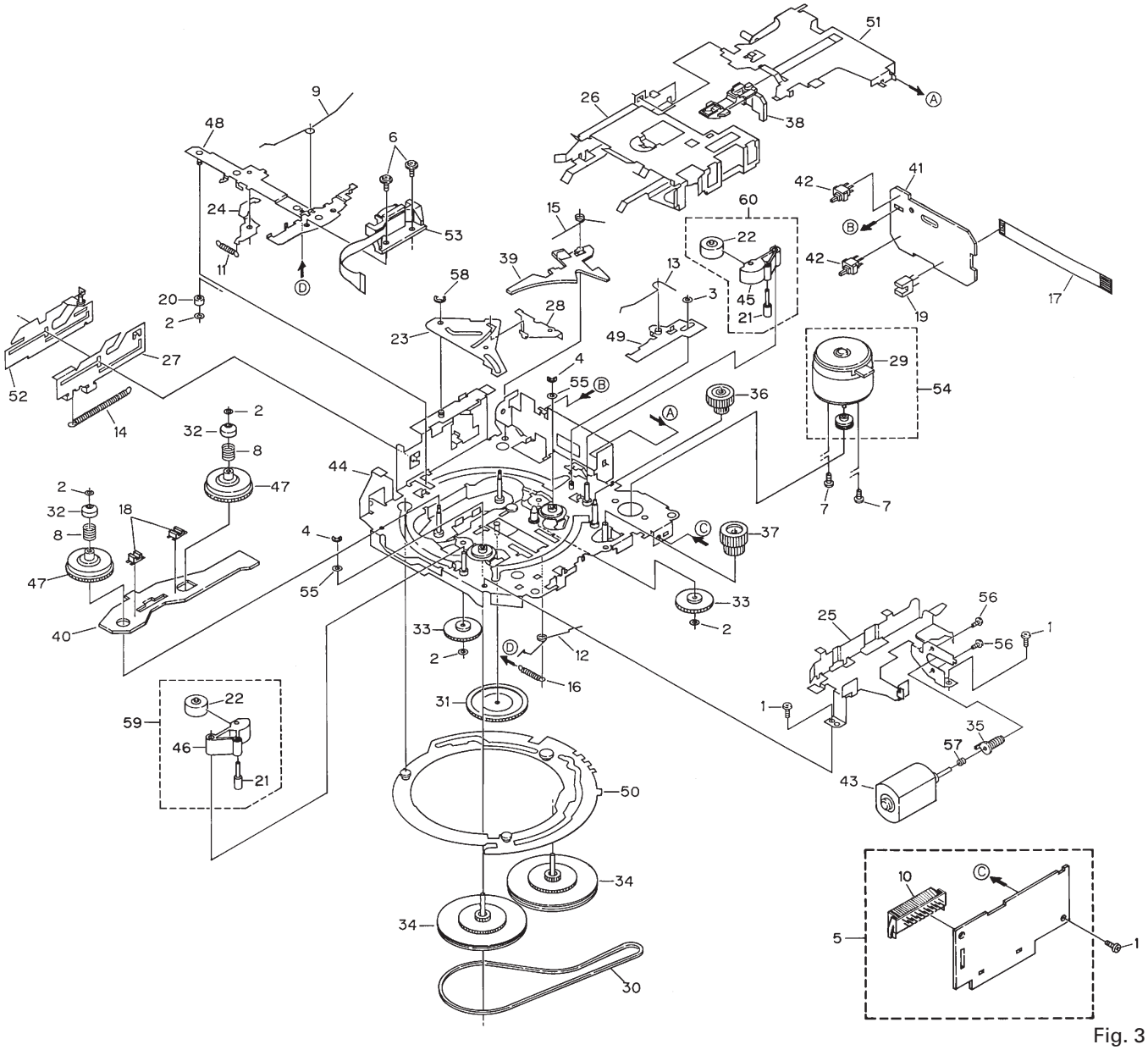


Fig. 3

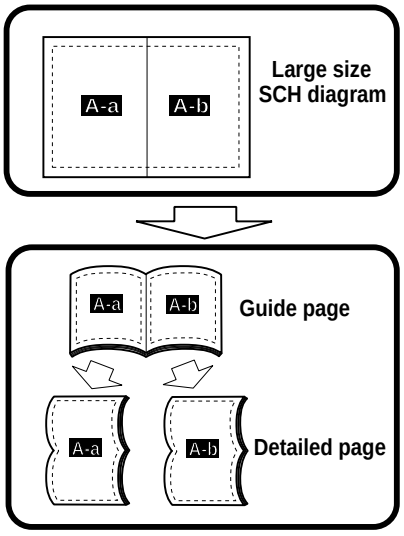
● CASSETTE MECHANISM MODULE SECTION PARTS LIST

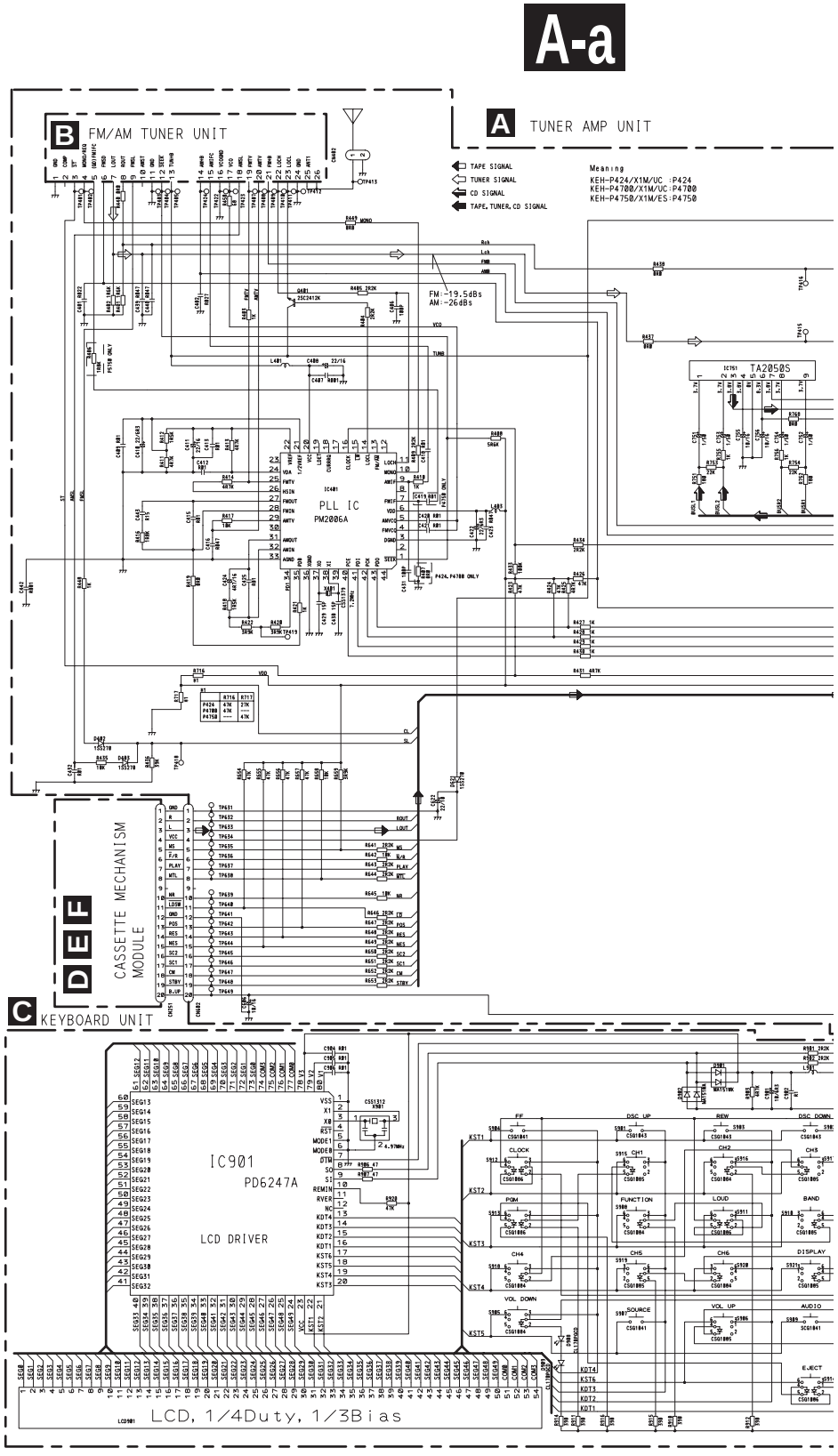
Mark	No.	Description	Part No.
	1	Screw	BSZ20P040FMC
	2	Washer	CBF1037
	3	Washer	CBF1038
	4	Washer	CBG1003
	5	Deck Unit	EWM1010
	6	Screw	EBA1028
	7	Screw	EBA1037
	8	Spring	EBH1531
	9	Spring	EBH1575
	10	Plug(CN251)	CKS3540
	11	Spring	EBH1515
	12	Spring	EBH1587
	13	Spring	EBH1517
	14	Spring	EBH1518
	15	Spring	EBH1519
	16	Spring	EBH1537
	17	Cord	EDD1020
	18	Photo-interrupter(EGN2,3)	EGN1006
	19	Photo-interrupter(EGN1)	EGN1005
	20	Roller	ENR1031
	21	Shaft	ELA1373
	22	Pinch Roller	ENV1518
	23	Arm	ENC1489
	24	Arm	ENC1397
	25	Guide	ENC1481
	26	Holder	ENC1417
	27	Lever	ENC1448
	28	Arm	ENC1488
*	29	Motor	EXM1031
	30	Belt	ENT1027
	31	Gear	ENV1347
	32	Collar	ENV1508
	33	Gear	ENV1350
	34	Flywheel	ENV1529
	35	Worm Gear	ENV1439
	36	Worm Wheel	ENV1440
	37	Gear	ENR1028
	38	Lever	ENV1442
	39	Arm	ENV1525
	40	Gathering P.C.Board	ENX1037
	41	Gathering P.C.Board	ENX1042
	42	Switch(S1,S2)	ESG1004
	43	Motor Unit(M2)	EXA1485
	44	Chassis Unit	EXA1511
	45	Pinch Holder	ENV1485
	46	Pinch Holder	ENV1486
	47	Reel Unit	EXA1543
	48	Head Base Unit	EXA1457
	49	Lever Unit	EXA1438
	50	Gear Unit	EXA1545
	51	Frame Unit	EXA1458
	52	Lever Unit	EXA1439
	53	Head Assy(HD1)	EXA1506
	54	Motor Unit(M1)	EXA1544
	55	Washer	HBF-179
	56	Screw	BMZ20P022FMC
	57	Spring	EBH1545
	58	Washer	YE20FUC
	59	Pinch Holder Unit	EXA1529
	60	Pinch Holder Unit	EXA1528

3. SCHEMATIC DIAGRAM

3.1 OVERALL CONNECTION DIAGRAM (GUIDE PAGE)

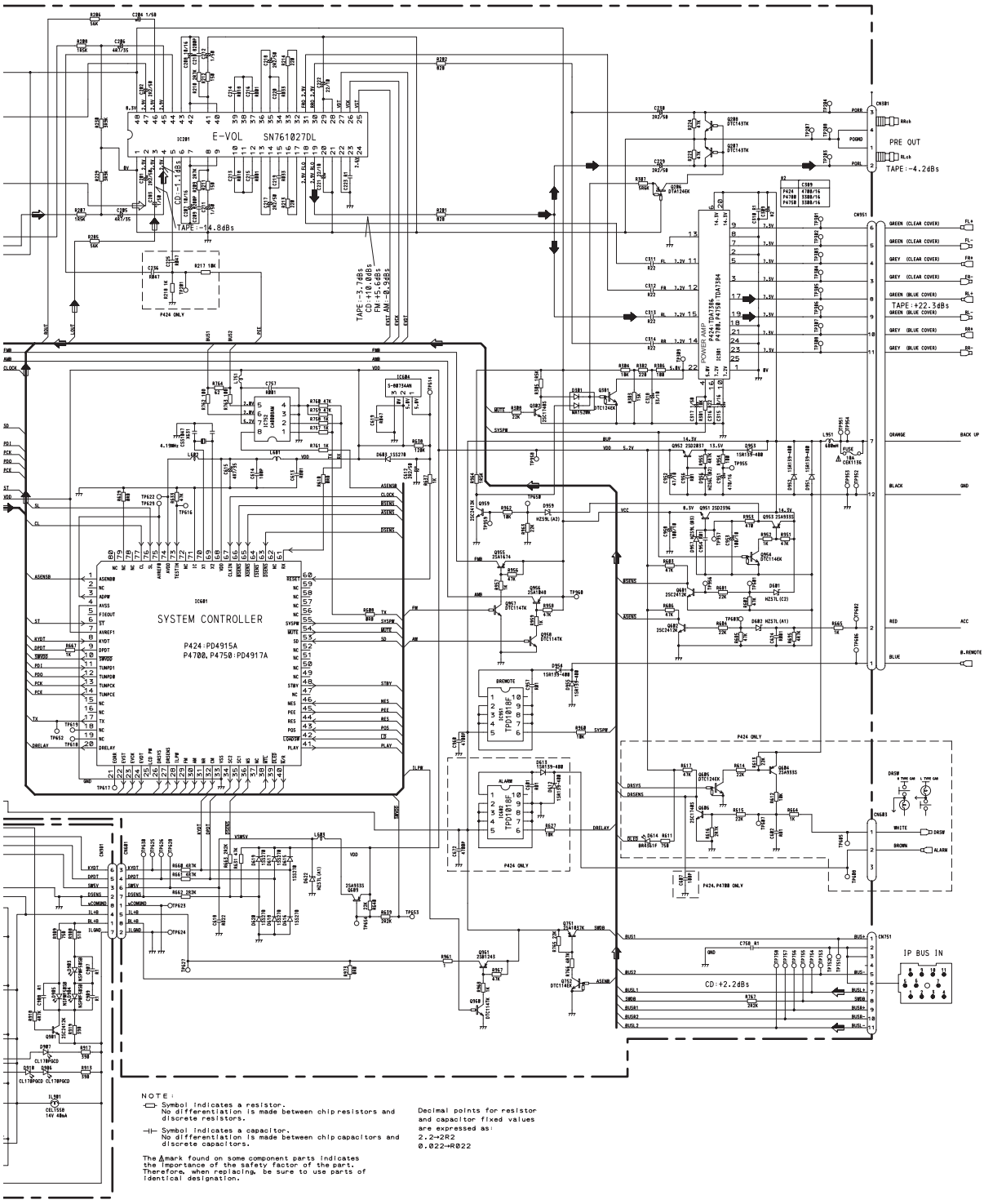
Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".





A C

A-b



NOTE:

Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.

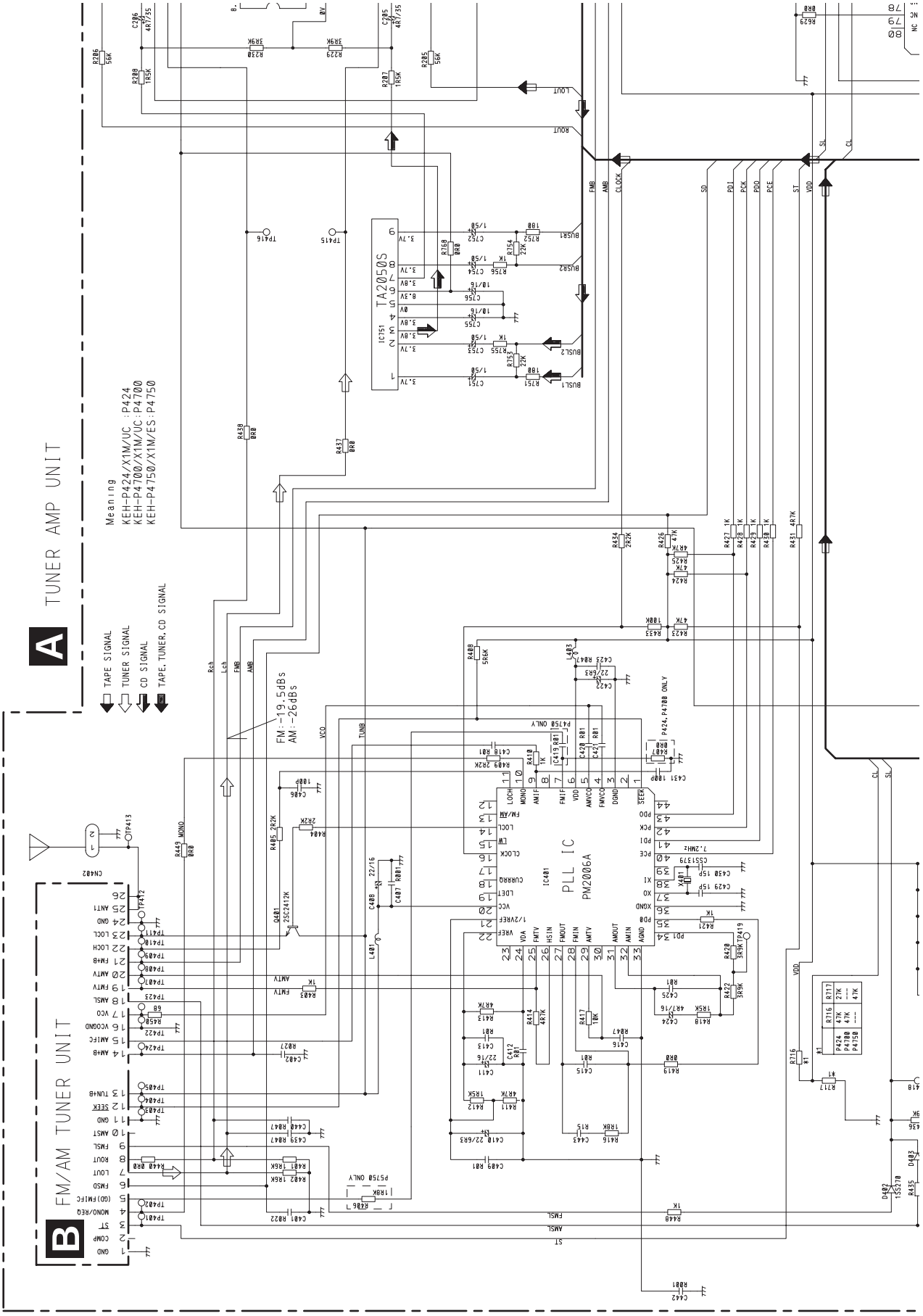
Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

The Δmark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

Fig. 4

A-a A-b


A TUNER AMP UNIT
B FM/AM TUNER UNIT
TAPE SIGNAL
TUNER SIGNAL
CD SIGNAL
TAPE, TUNER, CD SIGNAL
Meaning
KEH-P424/X1M/UC : P424
KEH-P4700/X1M/UC: P4700
KEH-P4750/X1M/ES: P4750
TA2050S
IC751
PLL IC
PM2006A
IC401
FM: -19.5dBs
AM: -26dBs
P424,P4700 ONLY
P475Ø ONLY

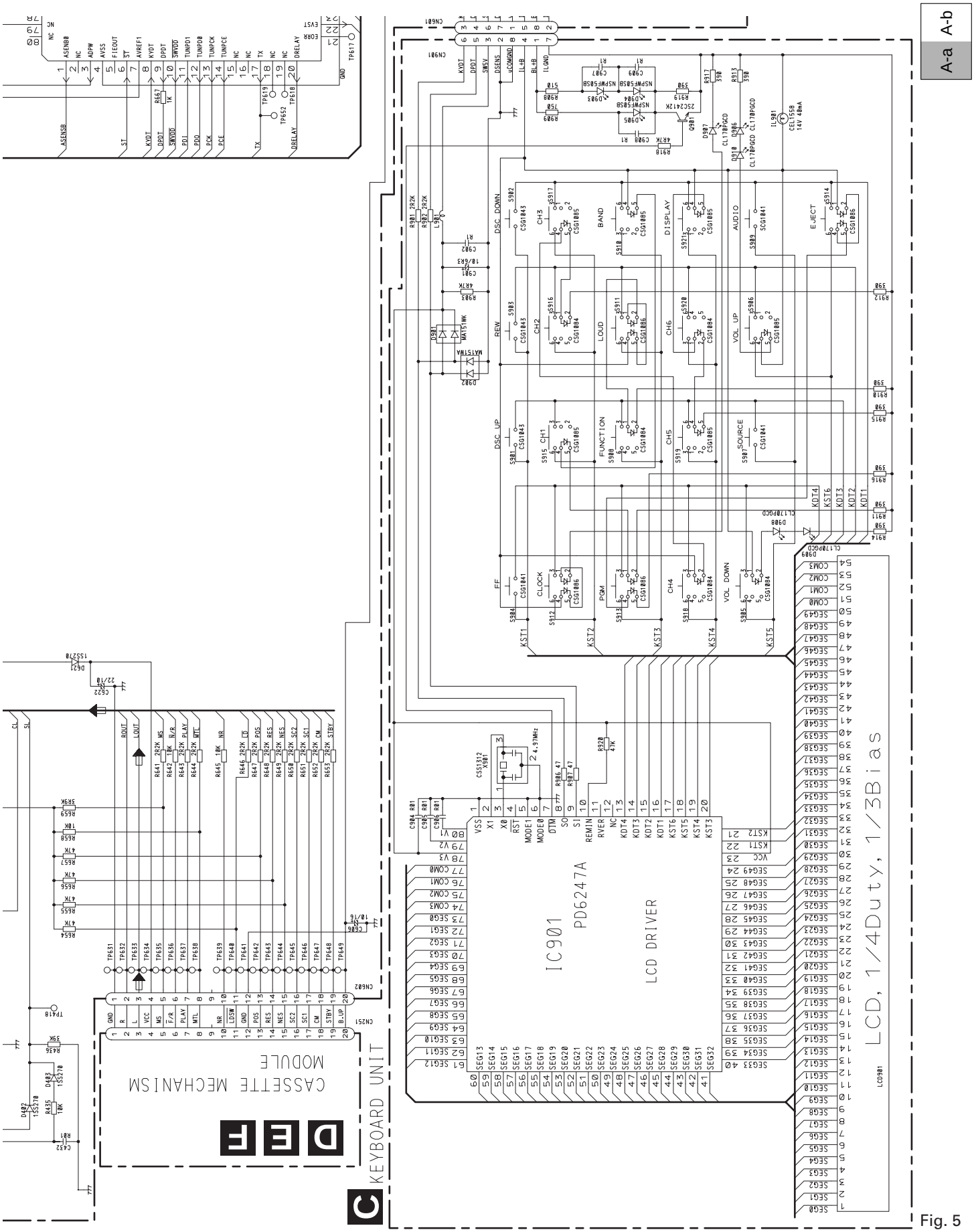
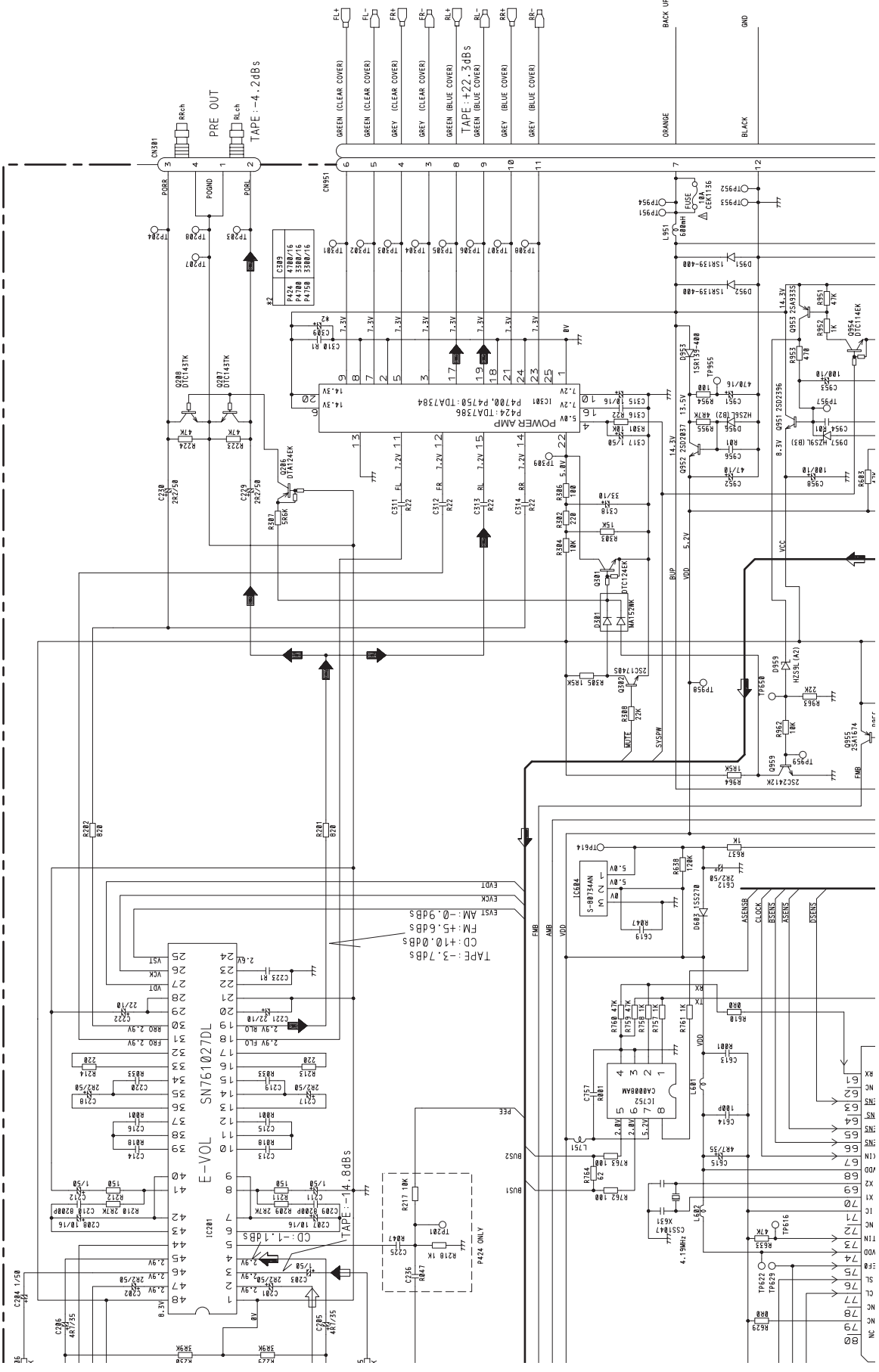
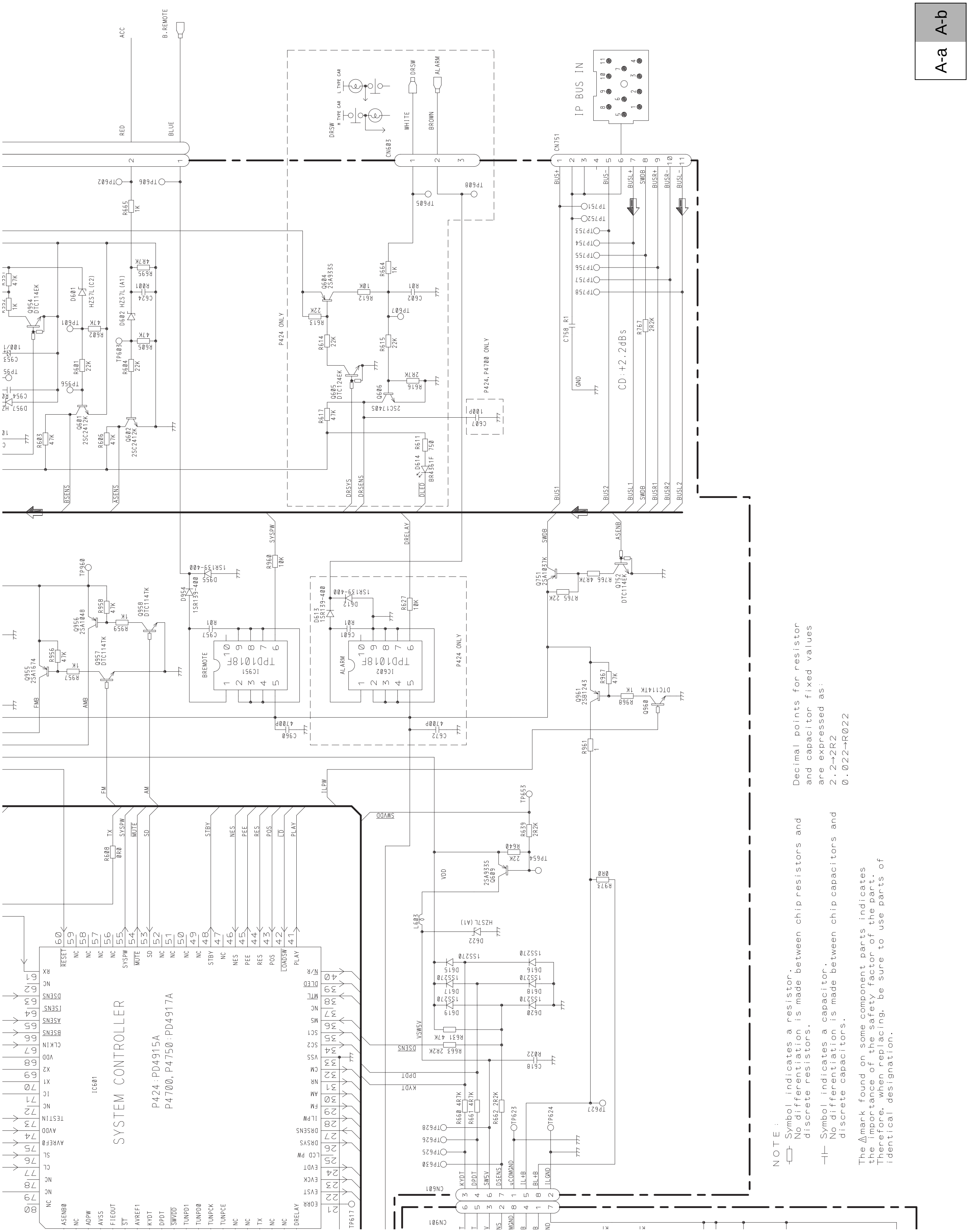

A-b
A-a
C KEYBOARD UNIT
CASSETTE MECHANISM MODULE
IC901 PD6247A LCD DRIVER
LCD, 1/4Duty, 1/3Bias
DSC_DOWN
DSC_UP
BAND
DISPLAY
AUDIO
EJECT
REW
FF
CH1
CH2
CH3
CH4
CH5
CH6
LOUD
FUNCTION
CLOCK
PGM
SOURCE
VOL_UP
VOL_DOWN

Fig. 5

A-a A-b


PRE OUT
TAPE:-4.2dBs
TAPE:+22.3dBs
POWER AMP
P424:TDA7386
P4700,P4750:TDA7384
E-VOL SN761027DL
TAPE:-14.8dBs
TAPE:-3.7dBs
CD:+10.0dBs
FM:+5.6dBs
AM:-0.9dBs
P424 ONLY

A-a A-b



NOTE:
Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.

Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

The △mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

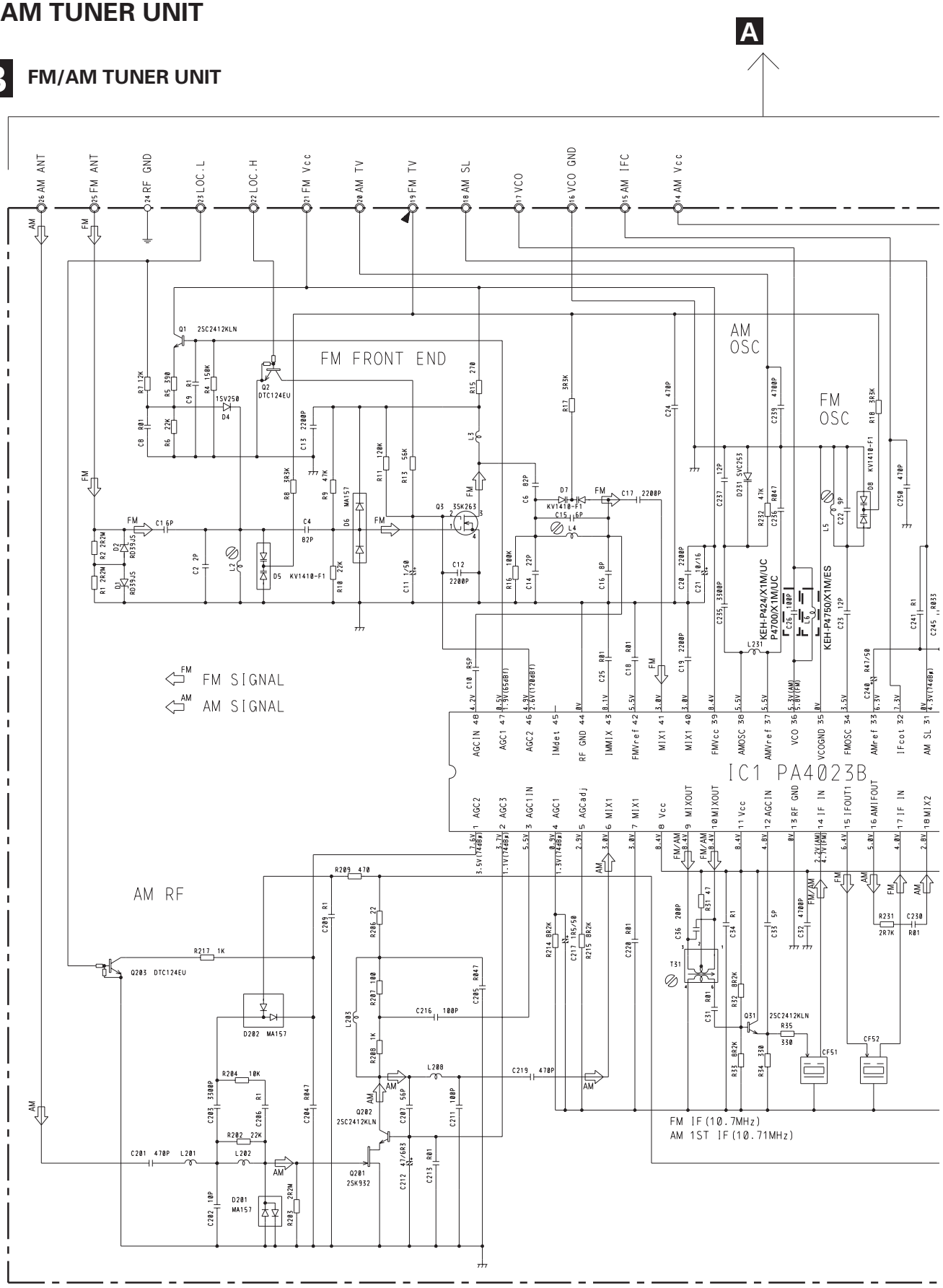
A
B
C
D

Fig. 6

A-b

3.2 FM/AM TUNER UNIT

B **FM/AM TUNER UNIT**



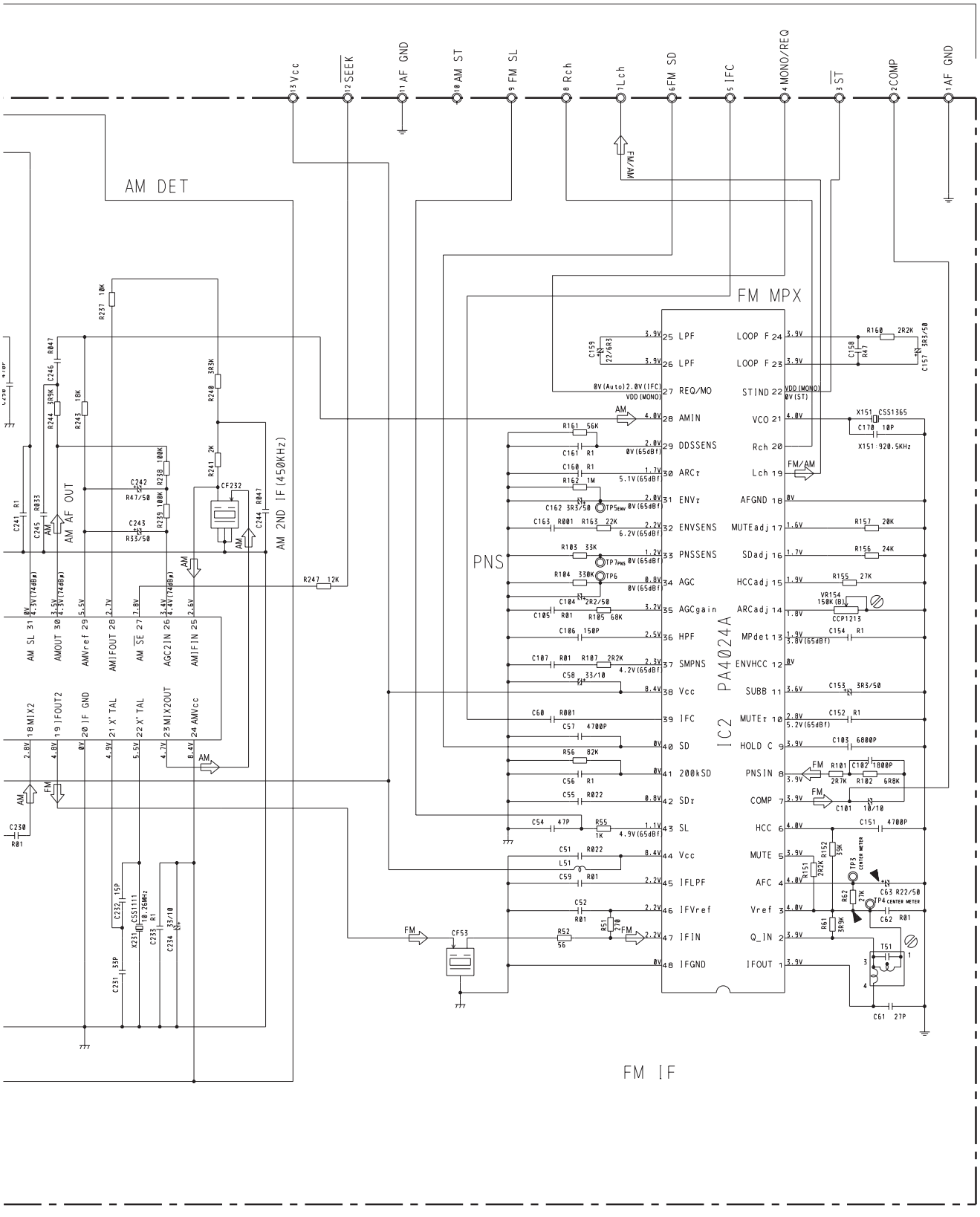
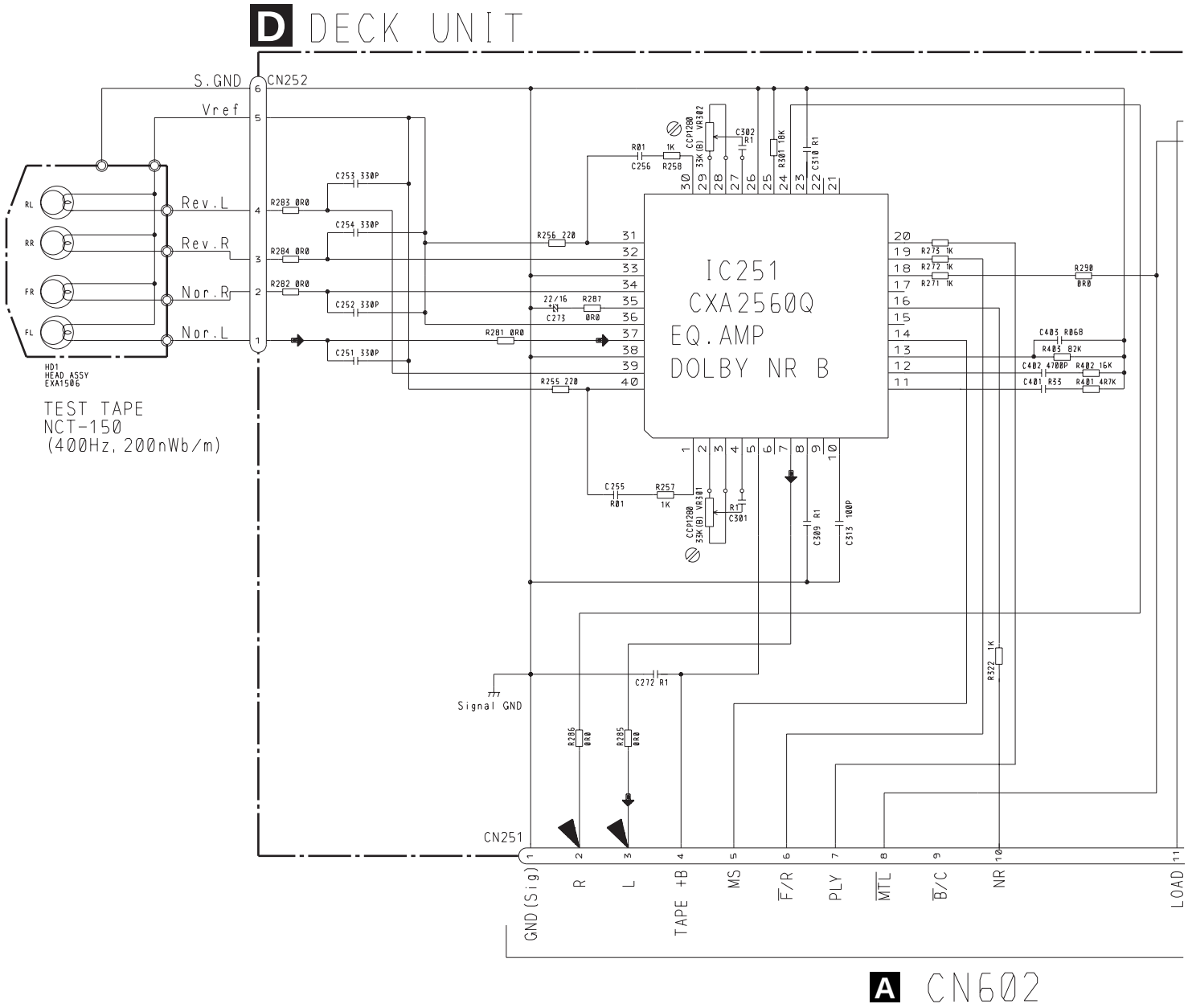
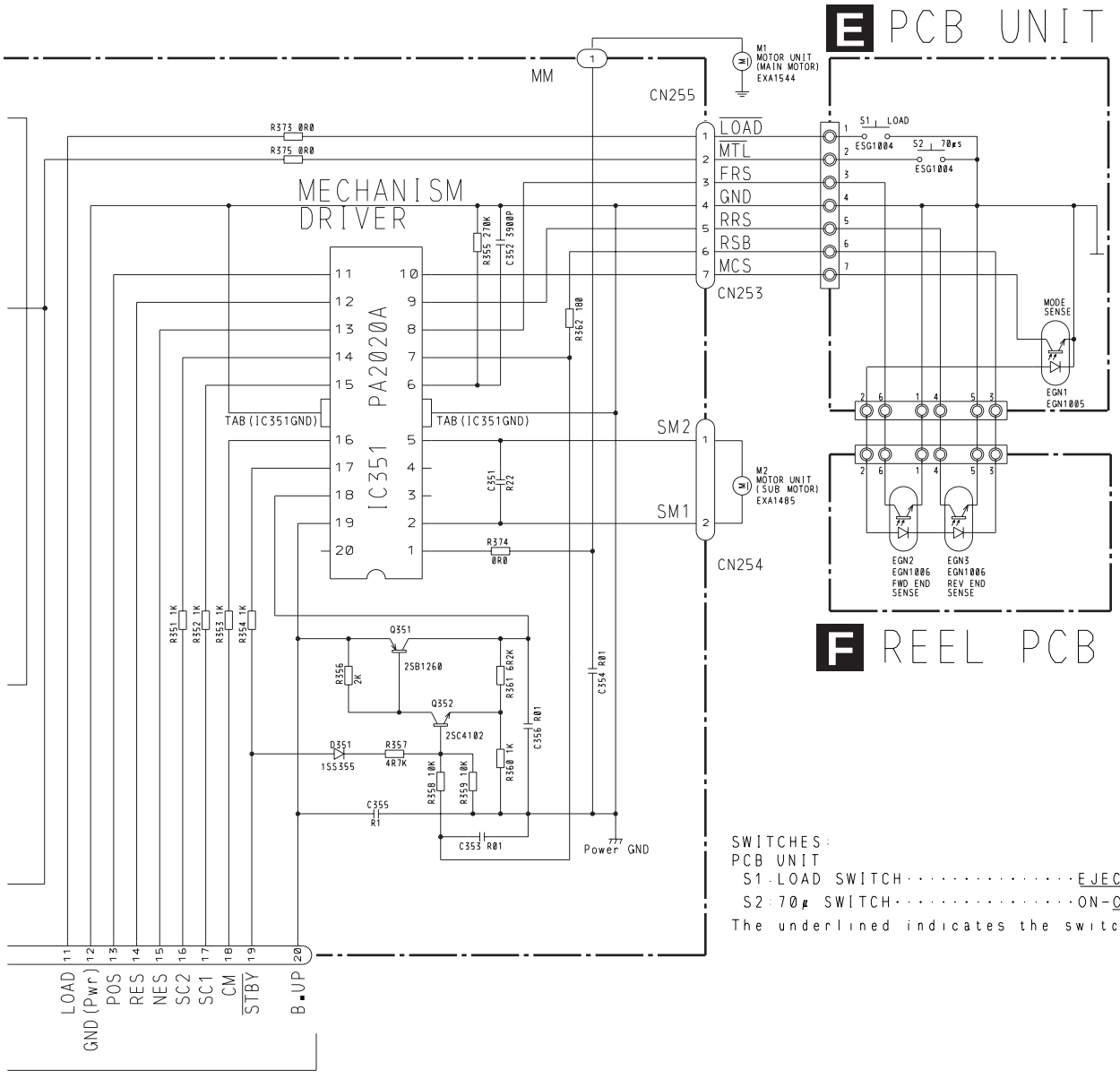

13 Vcc
12 SEEK
11 AF GND
10 AM ST
9 FM SL
8 Rch
7 Lch
6 FM SD
5 IFC
4 MONO/REQ
3 ST
2 COMP
1 AF GND
AM DET
FM MPX
PNS
IC2 PA4024A
AM AF OUT
AM 2ND IF (450KHz)
FM IF
FM/AM
CF232
CF53
X151 CSS1365
X151-920.5KHz
X231 CSS1111
10.25MHz
TP2 CENTER METER
TP4 CENTER METER
T51
CCP1213
25 LPF
26 LPF
27 REQ/MO
28 AMIN
29 DDSSENS
30 ARCr
31 ENVr
32 ENVSENS
33 PNSSENS
34 AGC
35 AGCgain
36 HPF
37 SMPNS
38 Vcc
39 IFC
40 SD
41 200kSD
42 SDr
43 SL
44 Vcc
45 IFLPF
46 IFVref
47 IFIN
48 IFGND
24 LOOP F
23 LOOP F
22 STIND
21 VCO
20 Rch
19 Lch
18 AFGND
17 MUTEadj
16 SDadj
15 HCCadj
14 ARCadj
13 MPdet
12 ENVHCC
11 SUBB
10 MUTEr
9 HOLD C
8 PNSIN
7 COMP
6 HCC
5 MUTE
4 AFC
3 Vref
2 Q_IN
1 IFOUT
31 AM SL
30 AMOUT
29 AMVref
28 AMIFOUT
27 AM SE
26 AGC2IN
25 AMIFIN
19 IFOUT2
20 IF GND
21 X'TAL
22 X'TAL
23 MIX2OUT
24 AMVcc
18 MIX2
R237 10K
R247 12K
R161 56K
R162 1W
R163 22K
R103 33K
R104 330K
R105 68K
R107 2R2K
R56 82K
R55 1K
R51 0
R52 56
R101 2R7K
R102 6R8K
R152 39K
R151 2R2K
R62 27K
R61 3R9K
R160 2R2K
R157 20K
R156 24K
R155 27K
VR154 150K(B)
R153 3R3/50
R154 R1
R152 39K
C170 10P
C101 10/10
C102 1800P
C103 6800P
C151 4700P
C152 R1
C153 3R3/50
C154 R1
C62 R01
C63 R22/50
C61 27P
C58 33/10
C57 4700P
C59 R01
C60 R001
C51 R022
C52 R01
C54 47P
C55 R022
C56 R1
C104 2R2/50
C105 R01
C106 150P
C107 R01
C159 22/6R3
C158 R47
C157 3R3/50
C160 R1
C161 R1
C162 3R3/50
C163 R001
TP5EWV
TP7PNS
TP6
R241 2K
R240 3R3K
R244 3R9K
R243 18K
R246 R047
R242 R47/50
R238 100K
R239 100K
R243 R33/50
R244 R047
C241 R1
R833
C245
C230 R01
C232 15P
C231 33P
C233
C234 33/10
RS1 270
FM/AM
AM
FM

Fig. 7

3.3 CASSETTE MECHANISM MODULE





SWITCHES:
PCB UNIT
S1:LOAD SWITCH ..... EJECT-PLAY
S2:70μ SWITCH ..... ON-OFF
The underlined indicates the switch position.

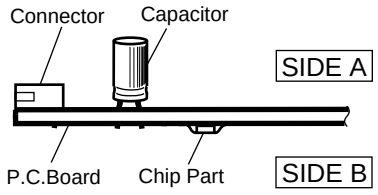
Fig. 8

4. PCB CONNECTION DIAGRAM

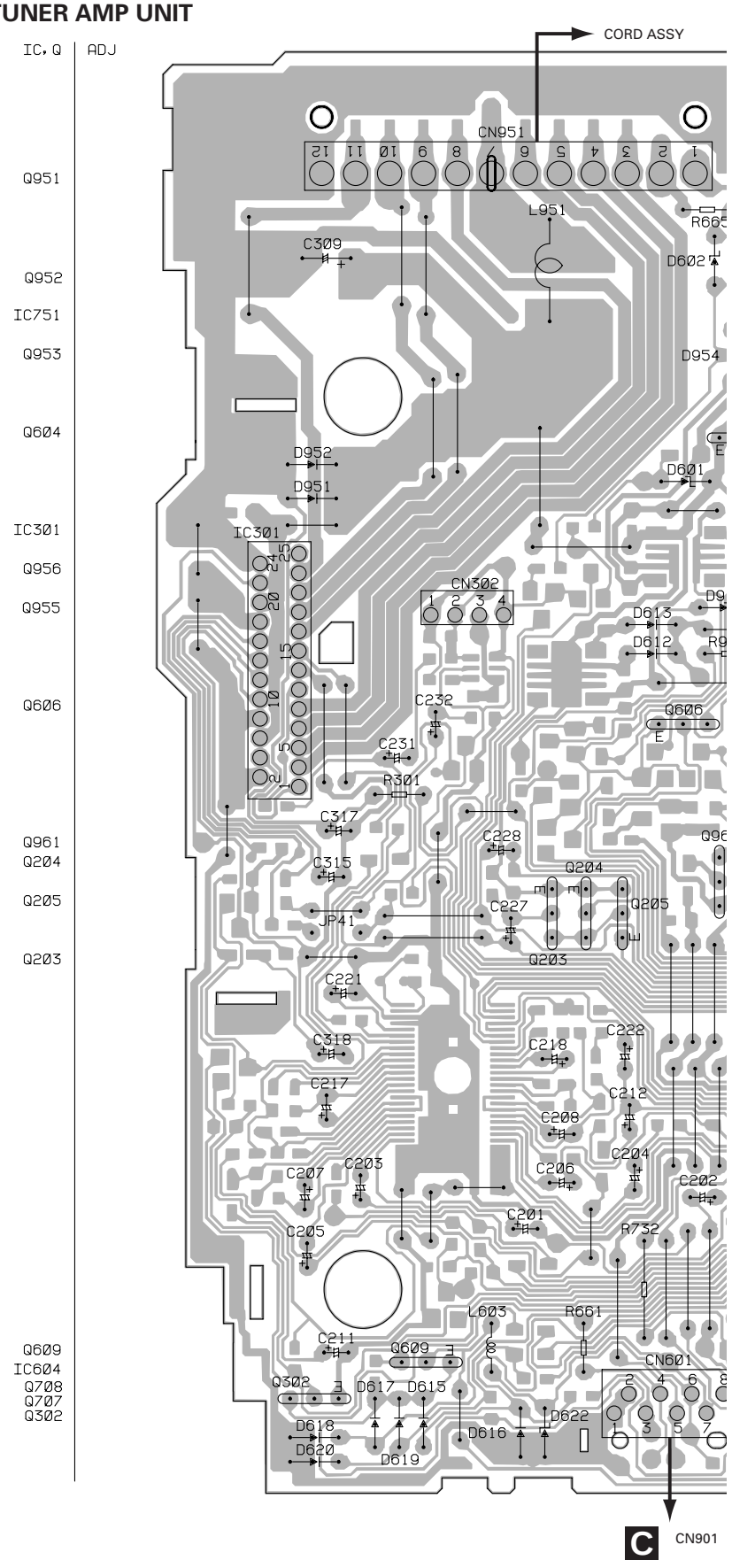
4.1 TUNER AMP UNIT

NOTE FOR PCB DIAGRAMS

1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams



A **TUNER AMP UNIT**



SIDE A

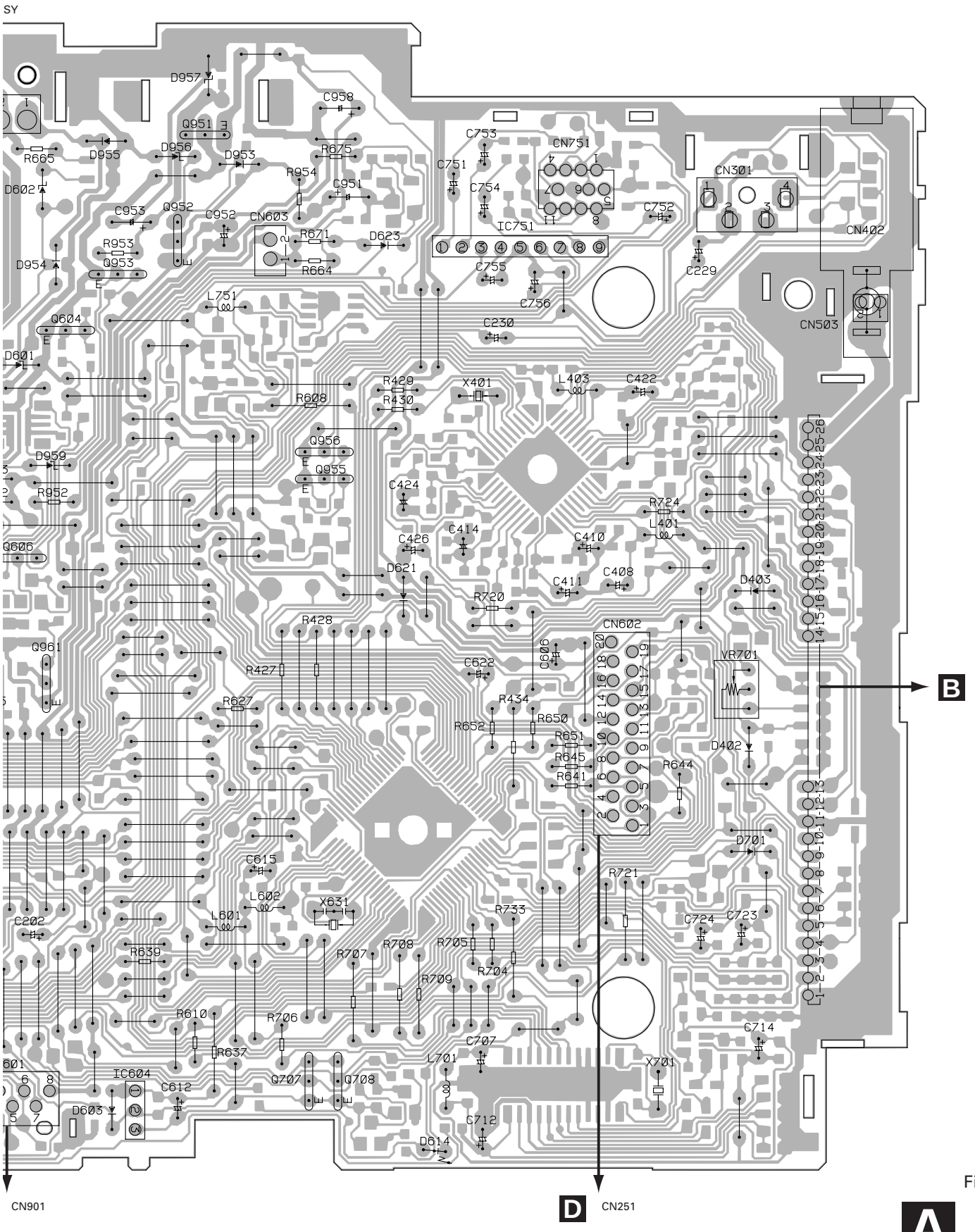
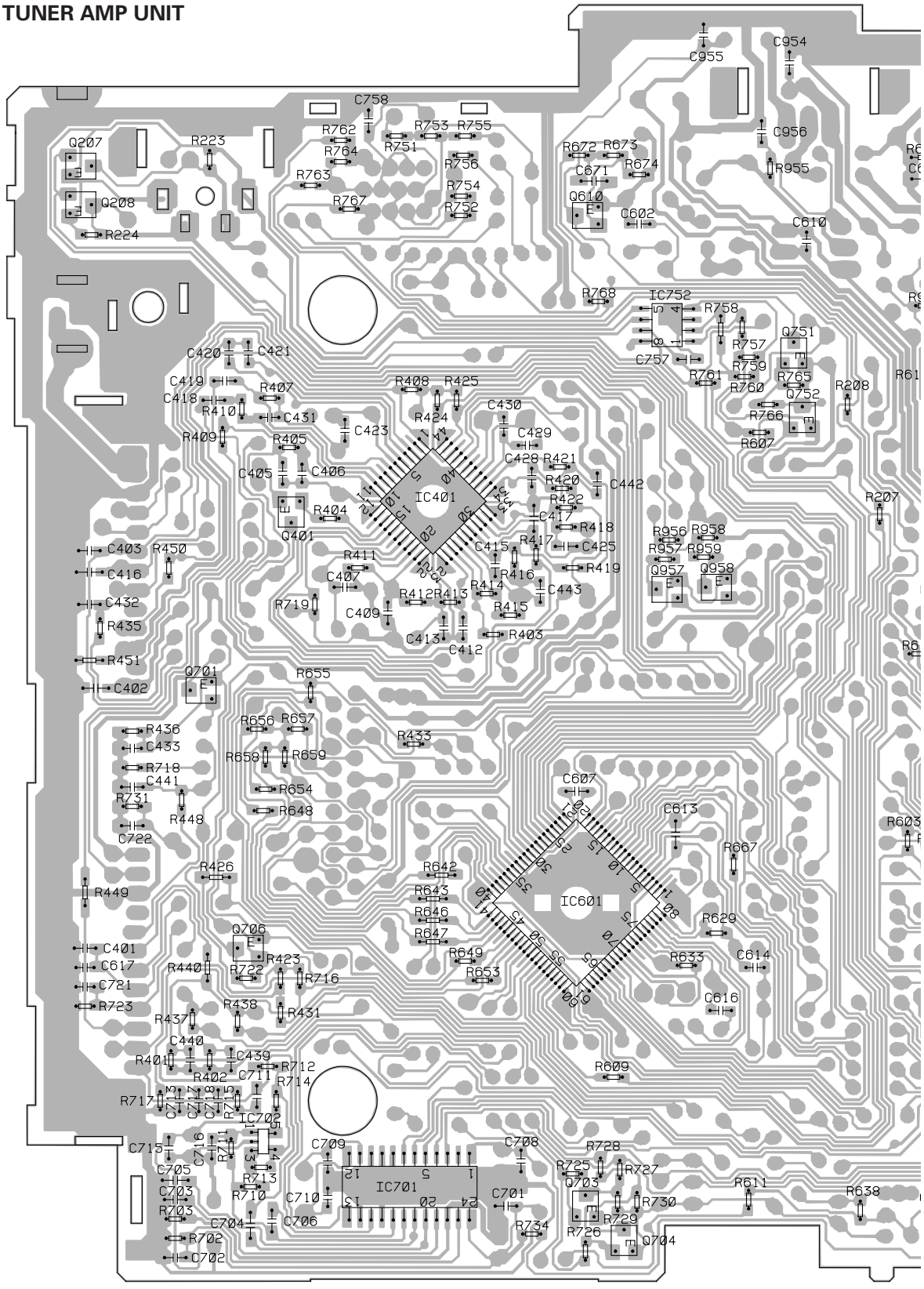
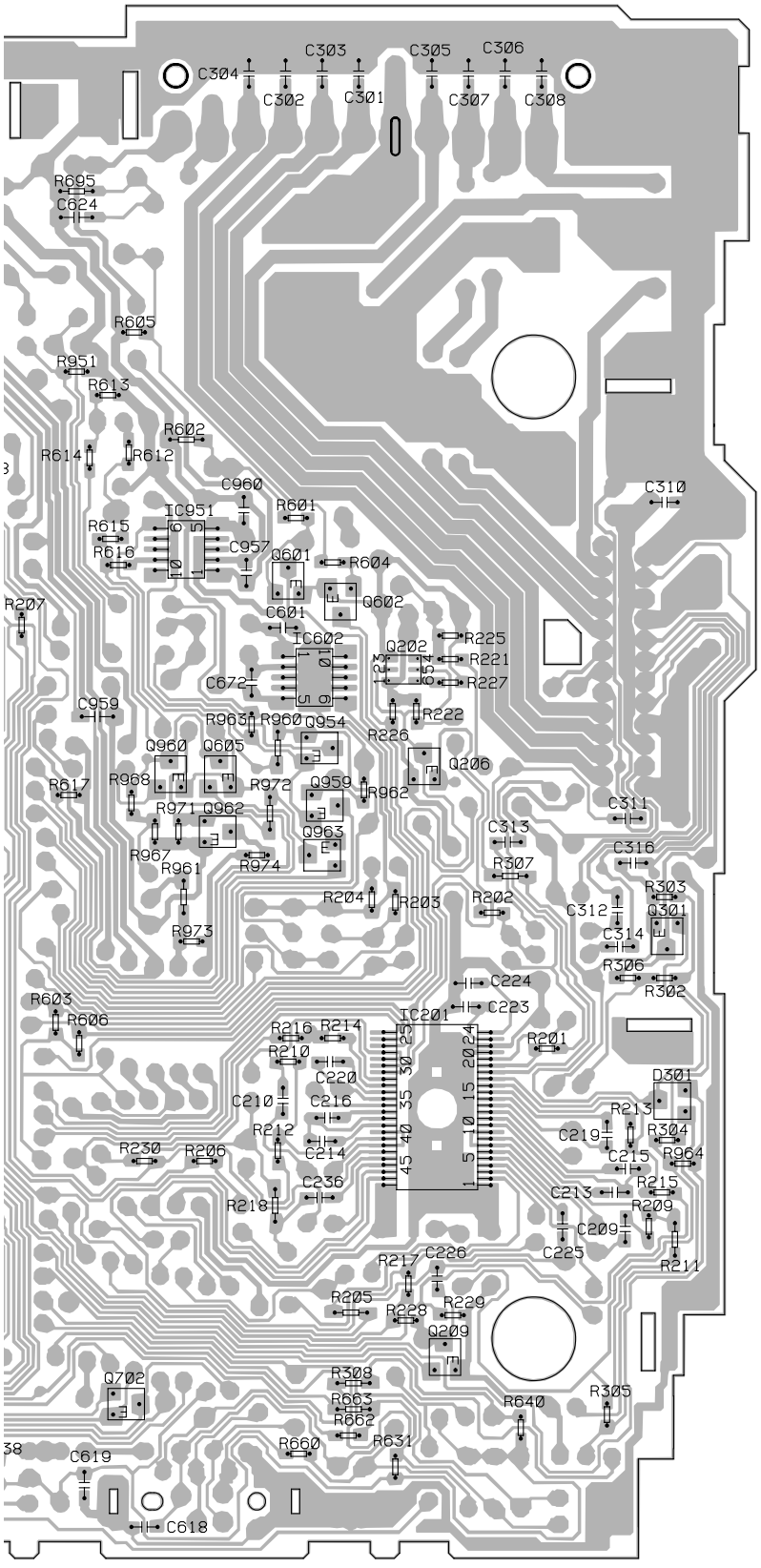

SY
D957
C958
Q951
R665
D955
D956
D953
R675
R954
C951
C753
CN751
C751
C754
C752
CN301
D602
C953
Q952
C952
CN603
R671
D623
IC751
CN402
R953
Q953
R664
C755
C229
D954
C756
L751
CN503
Q604
C230
D601
R429
X401
L403
C422
R608
R430
Q956
Q955
D959
R952
C424
R724
L401
C426
C414
C410
Q606
D621
C411
C408
D403
R720
R428
CN602
Q961
R427
C606
C622
VR701
R627
R434
R650
R652
R651
R645
R641
D402
R644
D701
C615
R721
L602
X631
C202
L601
R733
C724
C723
R639
R707
R708
R705
R709
R704
R610
R706
C714
R637
C707
IC604
L701
X701
Q707
Q708
C612
D603
C712
D614
CN901
CN251
B
D

Fig. 9

A TUNER AMP UNIT





IC, Q

SIDE B

Q207

Q208 Q610

IC752

Q751

Q752

IC951 Q601

Q901 Q902

IC401 Q602

Q401 Q202

IC602

Q957 Q958

Q954

Q960 Q605

Q959 Q206

Q701 Q962

Q963

Q301

IC201

IC601

Q706

Q209

IC702

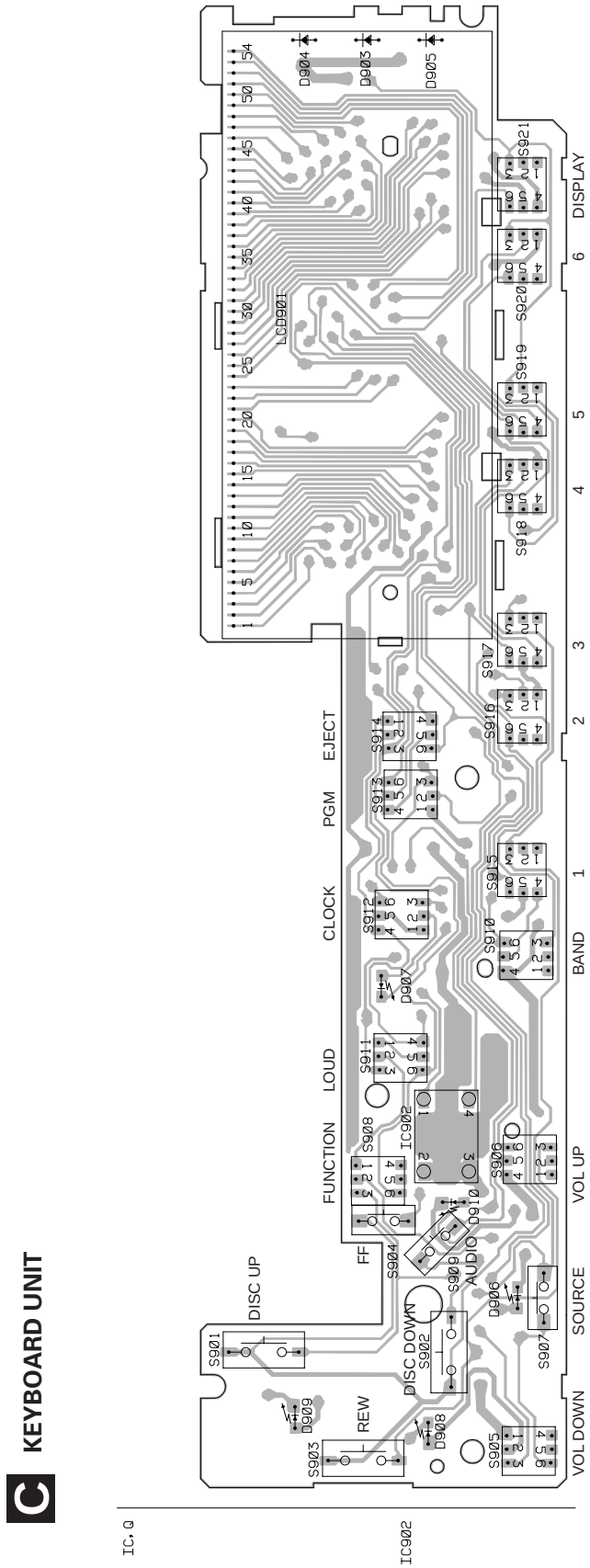
Q702

IC701 Q703

Q704

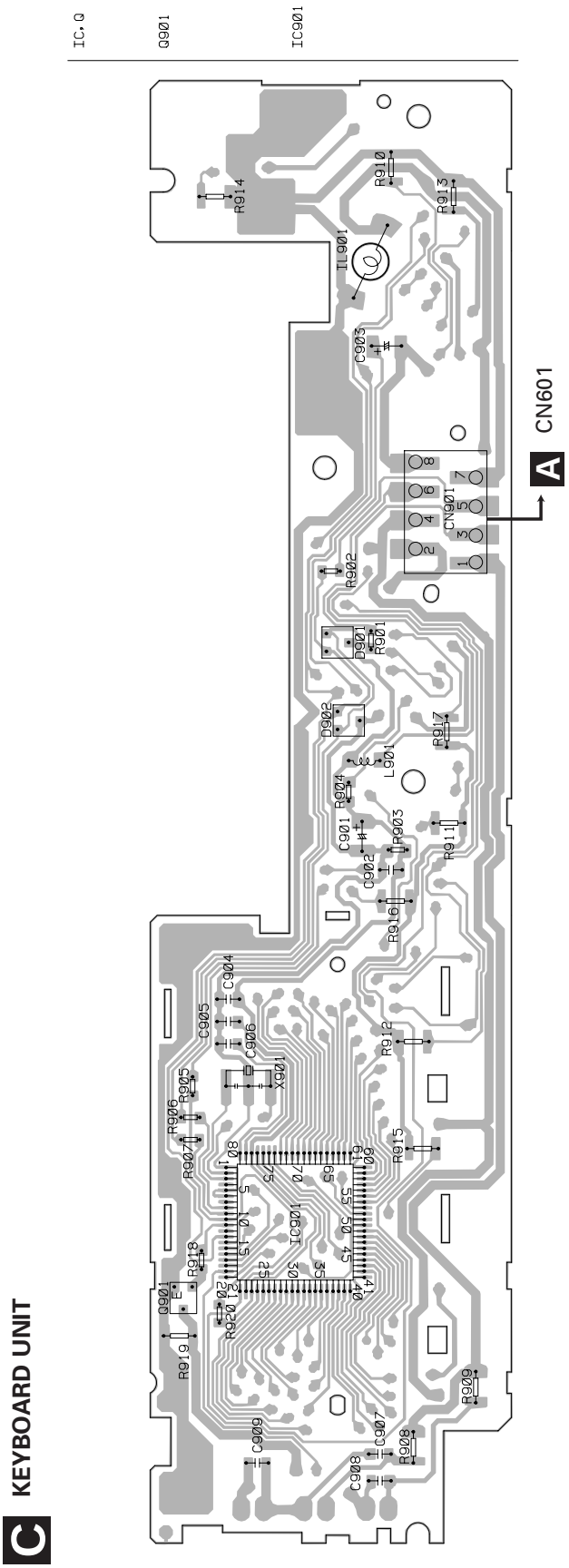
Fig. 10

4.2 KEYBOARD UNIT



KEYBOARD UNIT C

Fig. 11



KEYBOARD UNIT

Fig. 12

4.3 FM/AM TUNER UNIT

SIDE A

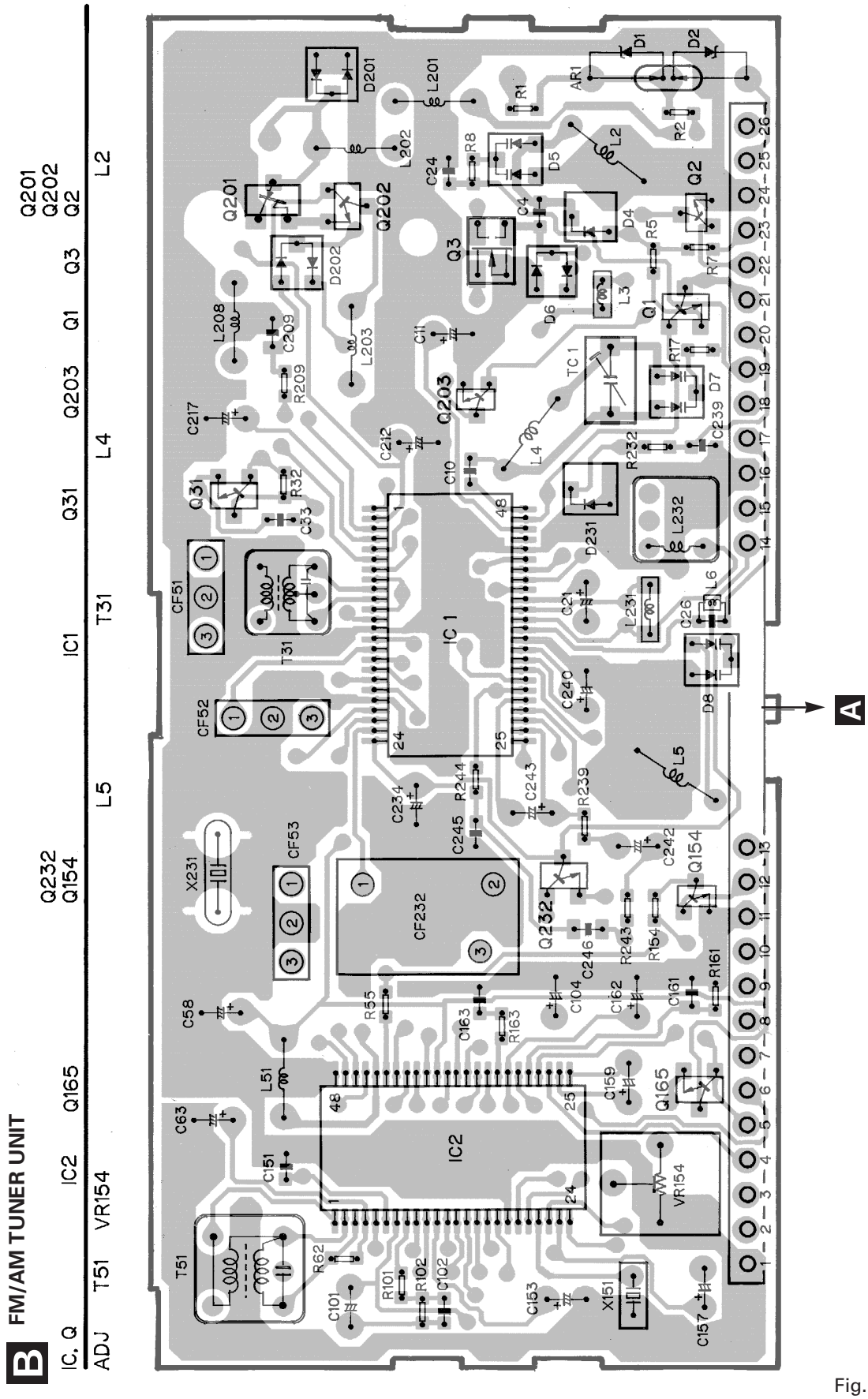
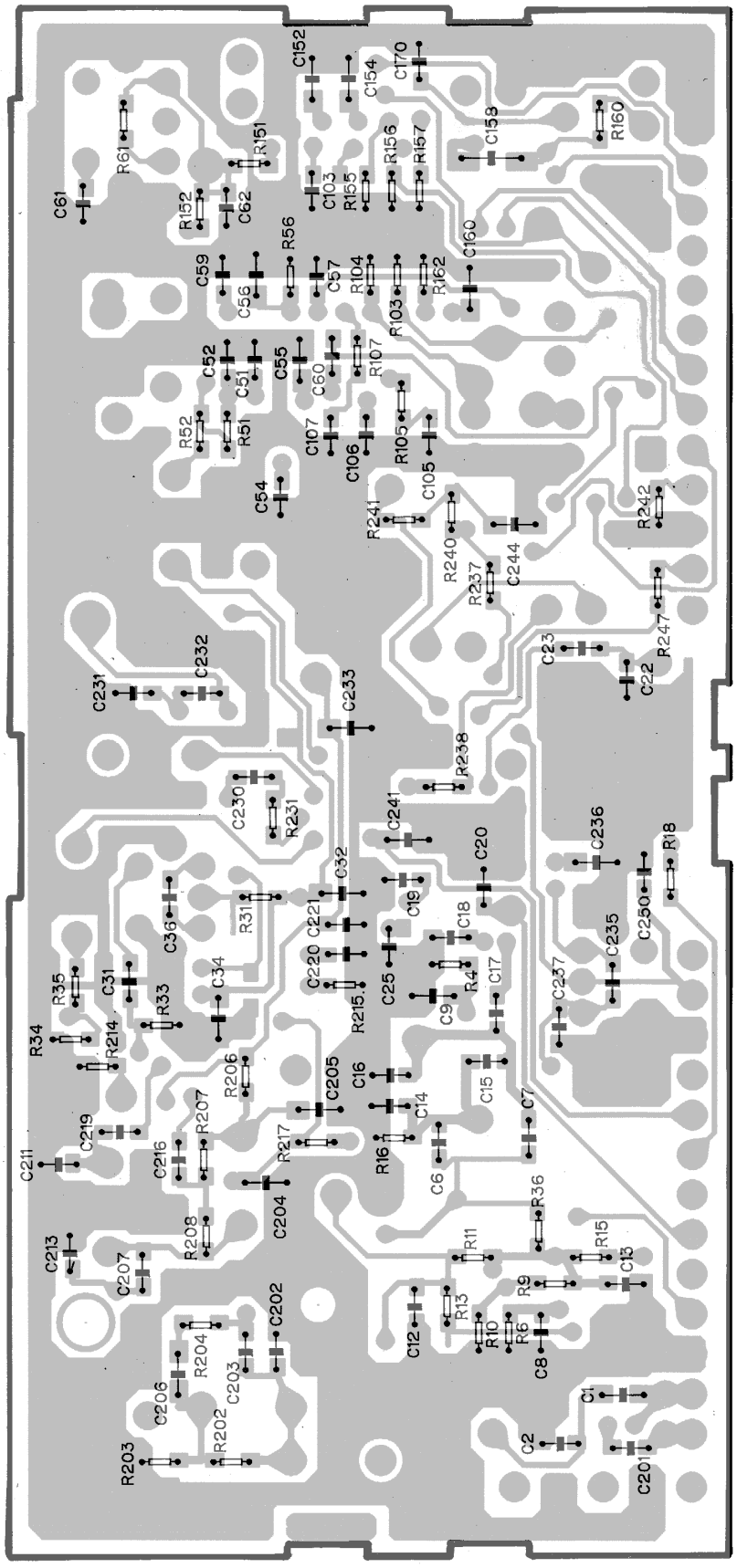


Fig. 13

B

SIDE B



B FM/AM TUNER UNIT

Fig. 14

4.4 CASSETTE MECHANISM MODULE

D **DECK UNIT**

SIDE A

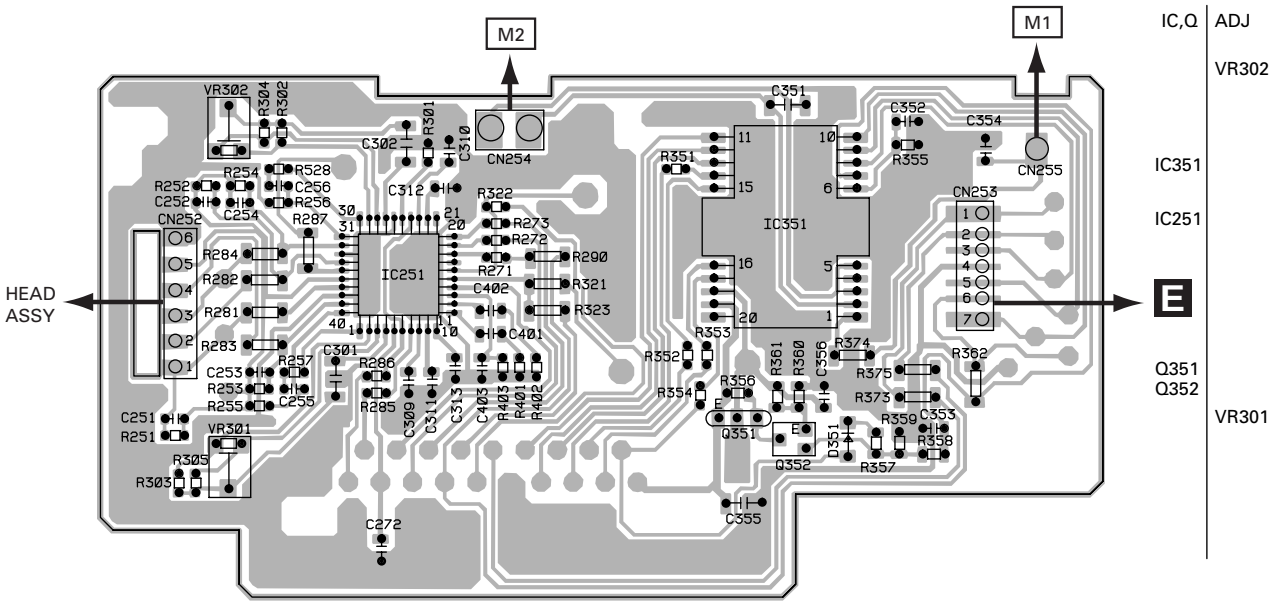


Fig. 15

D **DECK UNIT**

SIDE B

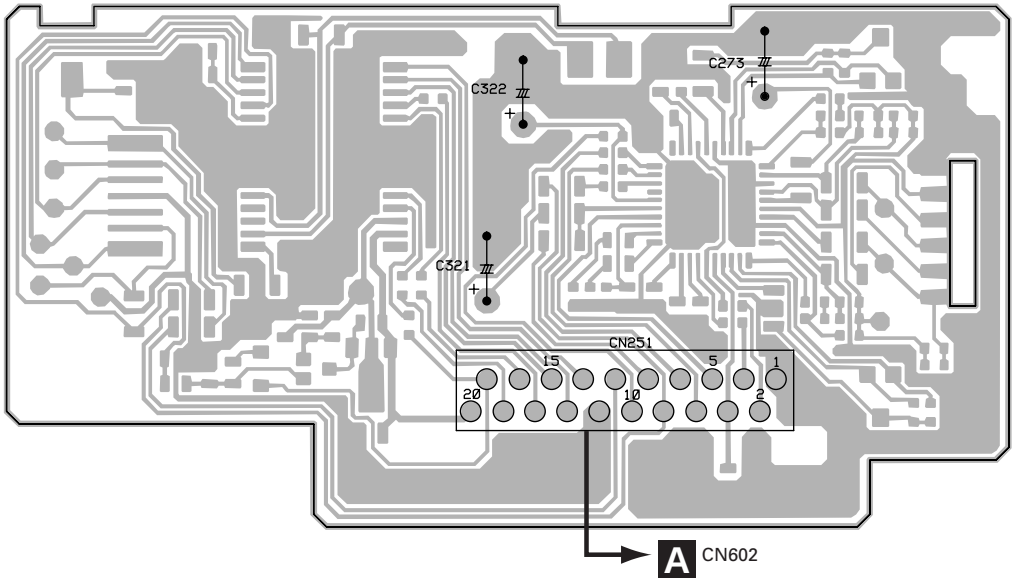


Fig. 16

E PCB UNIT

SIDE A

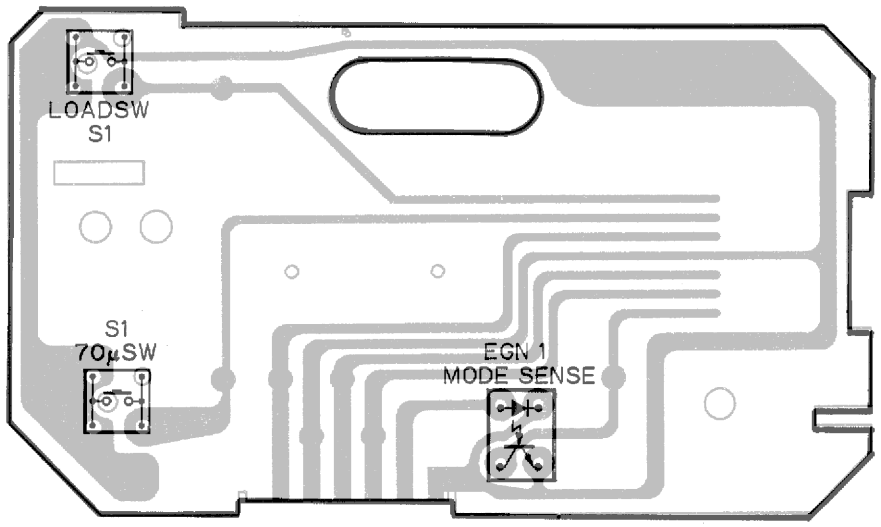


Fig. 17

E PCB UNIT

SIDE B

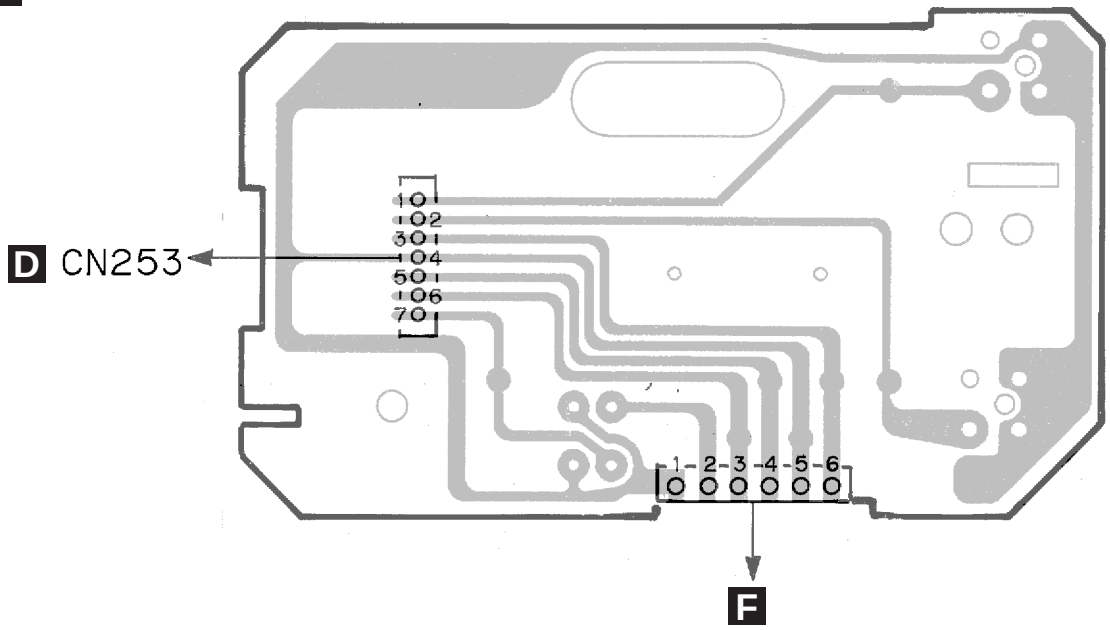


Fig. 18

F REEL PCB

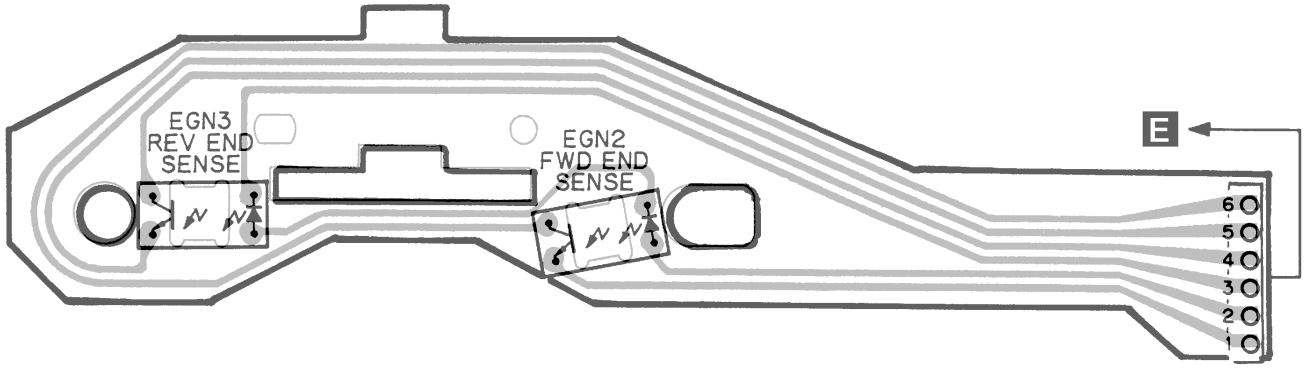


Fig. 19

5. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○S○○○J,RS1/○○S○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

B

Unit Number: CWE1467(KEH-P424/X1M/UC,P4700/X1M/UC)
Unit Number: CWE1486(KEH-P4750/X1M/ES)
Unit Name : FM/AM Tuner Unit

MISCELLANEOUS

=====Circuit Symbol and No.	===	Part Name	Part No.
IC	1	IC	PA4023B
IC	2	IC	PA4024A
Q	1	Transistor	2SC2412KLN
Q	2	Transistor	DTC124EU
Q	3	FET	3SK263
Q	31	Transistor	2SC2412KLN
Q	201	FET	2SK932
Q	202	Transistor	2SC2412KLN
Q	203	Transistor	DTC124EU
D	1	Diode	RD39JS
D	2	Diode	RD39JS
D	4	Diode	1SV250
D	5	Diode	KV1410-F1
D	6	Diode	MA157
D	7	Diode	KV1410-F1
D	8	Diode	KV1410-F1
D	201	Diode	MA157
D	202	Diode	MA157
D	231	Diode	SVC253
L	2	Coil	CTC1133
L	3	Inductor	LCTB2R2K2125
L	4	Coil	CTC1133
L	5	Coil	CTC1132
L	6	Inductor(KEH-P4750/X1M/ES)	LCTBR15K1608
L	51	Ferri-Inductor	LAU150K
L	201	Ferri-Inductor	LAU4R7K
L	202	Ferri-Inductor	LAU330K
L	203	Inductor	CTF1287
L	208	Inductor	LAU121K
L	231	Inductor	LCTA3R3J3225
T	31	Coil	CTE1116
T	51	Coil	CTC1136
CF	51	Ceramic Filter	CTF1290
CF	52	Ceramic Filter	CTF1290
CF	53	Ceramic Filter	CTF1290
CF	232	Ceramic Filter	CTF1348
X	151	Resonator 920.5kHz	CSS1365
X	231	Crystal Resonator 10.26MHz	CSS1111
VR	154	Semi-fixed 150kΩ(B)	CCP1213

RESISTORS

=====Circuit Symbol and No.	===	Part Name	Part No.
R	1		RS1/16S225J
R	2		RS1/16S225J
R	4		RS1/16S154J
R	5		RS1/16S391J
R	6		RS1/16S223J
R	7		RS1/16S123J
R	8		RS1/16S332J
R	9		RS1/16S473J
R	10		RS1/16S223J
R	11		RS1/16S124J
R	13		RS1/16S563J
R	15		RS1/16S271J
R	16		RS1/16S104J
R	17		RS1/16S332J
R	18		RS1/16S332J
R	31		RS1/16S470J
R	32		RS1/16S822J
R	33		RS1/16S822J
R	34		RS1/16S331J
R	35		RS1/16S331J
R	51		RS1/16S271J
R	52		RS1/16S560J
R	55		RS1/16S102J
R	56		RS1/16S823J
R	61		RS1/16S392J
R	62		RS1/16S273J
R	101		RS1/16S272J
R	102		RS1/16S682J
R	103		RS1/16S333J
R	104		RS1/16S334J
R	105		RS1/16S683J
R	107		RS1/16S222J
R	151		RS1/16S222J
R	152		RS1/16S393J
R	155		RS1/16S273J
R	156		RS1/16S243J
R	157		RS1/16S203J
R	160		RS1/16S222J
R	161		RS1/16S563J
R	162		RS1/16S105J
R	163		RS1/16S223J
R	202		RS1/16S223J
R	203		RS1/16S225J
R	204		RS1/16S103J
R	206		RS1/16S220J
R	207		RS1/16S101J
R	208		RS1/16S102J
R	209		RS1/16S471J
R	214		RS1/16S822J
R	215		RS1/16S822J
R	217		RS1/16S102J
R	231		RS1/16S272J
R	232		RS1/16S473J
R	237		RS1/16S103J
R	238		RS1/16S104J
R	239		RS1/16S104J
R	240		RS1/16S332J
R	241		RS1/16S202J
R	243		RS1/16S183J
R	244		RS1/16S392J

Circuit Symbol and No.		Part Name	Part No.
R	247		RS1/16S123J
CAPACITORS			
C	1		CCSQCH6R0D50
C	2		CCSRCK2R0C50
C	4		CCSRCH820J50
C	6		CCSRCH820J50
C	8		CKSRYB103K25
C	9		CKSQYB104K16
C	10		CCSRCKR50C50
C	11		CEJA1R0M50
C	12		CKSRYB222K50
C	13		CKSRYB222K50
C	14		CCSRCH220J50
C	15		CCSRCH6R0D50
C	16		CCSRCH8R0D50
C	17		CKSRYB222K50
C	18		CKSRYB103K25
C	19		CKSRYB222K50
C	20		CKSRYB222K50
C	21		CEJA100M16
C	22		CCSRTH9R0D50
C	23		CCSRTH120J50
C	24		CCSRCH471J50
C	25		CKSRYB103K25
C	26	(KEH-P424/X1M/UC,P4700/X1M/UC)	CCSRCH101J50
C	31		CKSRYB103K25
C	32		CKSQYB472K50
C	33		CCSRCH5R0C50
C	34		CKSQYB104K16
C	36		CCSRRH201J50
C	51		CKSRYB223K25
C	52		CKSRYB103K25
C	54		CCSRCH470J50
C	55		CKSQYB223K25
C	56		CKSQYB104K16
C	57		CKSRYB472K50
C	58		CEJA330M10
C	59		CKSRYB103K25
C	60		CKSRYB102K50
C	61		CCSRCH270J50
C	62		CKSRYB103K25
C	63		CEJAR22M50
C	101		CEJANP100M10
C	102		CKSRYB182K50
C	103		CKSRYB682K25
C	104		CEJA2R2M50
C	105		CKSRYB103K25
C	106		CCSRCH151J50
C	107		CKSRYB103K25
C	151		CKSRYB472K50
C	152		CKSQYB104K16
C	153		CEJA3R3M50
C	154		CKSQYB104K16
C	157		CEJA3R3M50
C	158		CKSYB474K16
C	159		CEJA220M6R3
C	160		CKSQYB104K16
C	161		CKSQYB104K16
C	162		CEJA3R3M50
C	163		CKSRYB102K50
C	170		CCSRCH100D50
C	201		CCSRCH471J50
C	202		CCSRCH100D50
C	203		CKSRYB332K50
C	204		CKSQYB473K16
C	205		CKSQYB473K16
C	206		CKSQYB104K16

Circuit Symbol and No.		Part Name	Part No.
C	207		CCSRCH560J50
C	209		CKSQYB104K16
C	211		CCSRCH101J50
C	212		CEJA470M6R3
C	213		CKSRYB103K25
C	216		CCSRCH101J50
C	217		CEJA1R5M50
C	219		CCSRCH471J50
C	220		CKSRYB103K25
C	230		CKSRYB103K25
C	231		CCSRCH330J50
C	232		CCSRCH150J50
C	233		CKSQYB104K16
C	234		CEJA330M10
C	235		CKSRYB332K50
C	236		CKSQYB473K16
C	237		CCSRCH120J50
C	239		CKSRYB472K50
C	240		CEJAR47M50
C	241		CKSQYB104K16
C	242		CEJAR47M50
C	243		CEJAR33M50
C	244		CKSQYB473K16
C	245		CKSRYB333K16
C	246		CKSQYB473K16
C	250		CCSRCH471J50

A

Unit Number : CWM5847(KEH-P424/X1M/UC)
: CWM5836(KEH-P4700/X1M/UC)
: CWM5800(KEH-P4750/X1M/ES)
Unit Name : Tuner Amp Unit

MISCELLANEOUS

IC	201	IC	SN761027DL
IC	301	IC	See Contrast table
IC	401	IC	PM2006A
IC	601	IC	See Contrast table
IC	602	IC	See Contrast table
IC	604	IC	S-80734AN
IC	751	IC	TA2050S
IC	752	IC	CA0008AM
IC	951	IC	TPD1018F
Q	206	Transistor	DTA124EK
Q	207	Transistor	DTC143TK
Q	208	Transistor	DTC143TK
Q	301	Transistor	DTC124EK
Q	302	Transistor	2SC1740S
Q	401	Transistor	2SC2412K
Q	601	Transistor	2SC2412K
Q	602	Transistor	2SC2412K
Q	604	Transistor	See Contrast table
Q	605	Transistor	See Contrast table
Q	606	Transistor	See Contrast table
Q	609	Transistor	2SA933S
Q	751	Transistor	2SA1037K
Q	752	Transistor	DTC114EK
Q	951	Transistor	2SD2396
Q	952	Transistor	2SD2037
Q	953	Transistor	2SA933S
Q	954	Transistor	DTC114EK
Q	955	Transistor	2SA1674
Q	956	Transistor	2SA1048
Q	957	Transistor	DTC114TK
Q	958	Transistor	DTC114TK
Q	959	Transistor	2SC2412K
Q	960	Transistor	DTC114TK
Q	961	Transistor	2SB1243
D	301	Diode	MA152WK

Circuit Symbol and No.	Part Name	Part No.
D 402	Diode	1SS270
D 403	Diode	1SS270
D 601	Diode	HZS7L(C2)
D 602	Diode	HZS7L(A1)
D 603	Diode	1SS270
D 612	Diode	See Contrast table
D 613	Diode	See Contrast table
D 614	LED	See Contrast table
D 615	Diode	1SS270
D 616	Diode	1SS270
D 617	Diode	1SS270
D 618	Diode	1SS270
D 619	Diode	1SS270
D 620	Diode	1SS270
D 621	Diode	1SS270
D 622	Diode	HZS7L(A1)
D 951	Diode	1SR139-400
D 952	Diode	1SR139-400
D 953	Diode	1SR139-400
D 954	Diode	1SR139-400
D 955	Diode	1SR139-400
D 956	Diode	HZS6L(B2)
D 957	Diode	HZS9L(B3)
D 959	Diode	HZS9L(A2)
L 401	Ferri-Inductor	LAU2R2K
L 403	Ferri-Inductor	LAU2R2K
L 601	Ferri-Inductor	LAU2R2K
L 602	Ferri-Inductor	LAU2R2K
L 603	Ferri-Inductor	LAU2R2K
L 751	Ferri-Inductor	LAU2R2K
L 951	Choke Coil 600µH	CTH1168
X 401	Crystal Resonator 7.200MHz	CSS1379
X 631	Ceramic Resonator 4.194MHz	CSS1047
	FM/AM Tuner Unit	See Contrast table

RESISTORS

Circuit Symbol and No.	Part Name	Part No.
R 201		RS1/10S821J
R 202		RS1/10S821J
R 205		RS1/8S563J
R 206		RS1/10S563J
R 207		RS1/10S152J
R 208		RS1/10S152J
R 209		RS1/10S272J
R 210		RS1/10S272J
R 211		RS1/8S151J
R 212		RS1/10S151J
R 213		RS1/10S221J
R 214		RS1/10S221J
R 217		See Contrast table
R 218		See Contrast table
R 223		RS1/10S473J
R 224		RS1/10S473J
R 229		RS1/10S392J
R 230		RS1/10S392J
R 301		RD1/4PU103J
R 302		RS1/10S221J
R 303		RS1/10S153J
R 304		RS1/10S103J
R 305		RS1/10S152J
R 306		RS1/10S101J
R 307		RS1/8S562J
R 308		RS1/8S223J
R 401		RS1/10S162J
R 402		RS1/10S162J
R 403		RS1/10S102J
R 404		RS1/10S222J
R 405		RS1/10S222J
R 406		See Contrast table
R 407		See Contrast table
R 408		RS1/10S562J
R 409		RS1/10S222J
R 410		RS1/10S102J
R 411		RS1/10S472J
R 412		RS1/10S152J
R 413		RS1/10S472J
R 414		RS1/10S472J
R 416		RS1/10S182J
R 417		RS1/10S103J
R 418		RS1/10S152J
R 419		RS1/10S0R0J
R 420		RS1/10S392J
R 421		RS1/10S102J
R 422		RS1/10S392J
R 423		RS1/10S473J
R 424		RS1/10S473J
R 425		RS1/10S472J
R 426		RS1/8S473J
R 427		RD1/4PU102J
R 428		RD1/4PU102J
R 429		RD1/4PU102J
R 430		RD1/4PU102J
R 431		RS1/10S472J
R 433		RS1/10S104J
R 434		RD1/4PU222J
R 435		RS1/10S103J
R 436		RS1/10S393J
R 437		RS1/10S0R0J
R 438		RS1/10S0R0J
R 440		RS1/8S0R0J
R 448		RS1/10S102J
R 449		RS1/8S0R0J
R 450		RS1/10S680J
R 601		RS1/10S223J
R 602		RS1/8S473J
R 603		RS1/10S473J
R 604		RS1/10S223J
R 605		RS1/10S473J
R 606		RS1/10S473J
R 608		RD1/4PU0R0J
R 610		RD1/4PU0R0J
R 611		See Contrast table
R 612		See Contrast table
R 613		See Contrast table
R 614		See Contrast table
R 615		See Contrast table
R 616		See Contrast table
R 617		See Contrast table
R 627		See Contrast table
R 629		RS1/10S0R0J
R 631		RS1/10S473J
R 633		RS1/10S473J
R 637		RD1/4PU102J
R 638		RS1/10S124J
R 639		RD1/4PU222J
R 640		RS1/10S223J
R 641		RD1/4PU222J
R 642		RS1/8S103J
R 643		RS1/8S222J
R 644		RD1/4PU222J
R 645		RD1/4PU103J
R 646		RS1/8S222J

Circuit Symbol and No.	Part Name	Part No.
R 647		RS1/8S222J
R 648		RS1/10S222J
R 649		RS1/10S222J
R 650		RD1/4PU222J
R 651		RD1/4PU222J
R 652		RD1/4PU222J
R 653		RS1/10S222J
R 654		RS1/10S473J
R 655		RS1/10S473J
R 656		RS1/10S473J
R 657		RS1/10S473J
R 658		RS1/10S103J
R 659		RS1/10S392J
R 660		RS1/10S472J
R 661		RD1/4PU472J
R 662		RS1/10S222J
R 663		RS1/8S222J
R 664		See Contrast table
R 665		RD1/4PU102J
R 667		RS1/10S102J
R 695		RS1/8S472J
R 716		See Contrast table
R 717		See Contrast table
R 751		RS1/10S181J
R 752		RS1/10S181J
R 753		RS1/10S223J
R 754		RS1/10S223J
R 755		RS1/10S102J
R 756		RS1/10S102J
R 757		RS1/10S102J
R 758		RS1/8S102J
R 759		RS1/10S473J
R 760		RS1/10S473J
R 761		RS1/10S102J
R 762		RS1/10S101J
R 763		RS1/10S101J
R 764		RS1/10S620J
R 765		RS1/10S223J
R 766		RS1/10S472J
R 767		RS1/10S222J
R 768		RS1/10S0R0J
R 951		RS1/10S473J
R 952		RD1/4PU102J
R 953		RD1/4PU471J
R 954		RD1/4PU101J
R 955		RS1/10S472J
R 956		RS1/10S473J
R 957		RS1/10S102J
R 958		RS1/10S473J
R 959		RS1/10S102J
R 960		RS1/8S103J
R 961		RS1/8S1R0J
R 962		RS1/10S103J
R 963		RS1/10S223J
R 964		RS1/10S152J
R 967		RS1/10S473J
R 968		RS1/10S102J
R 973		RS1/10S0R0J

CAPACITORS

Circuit Symbol and No.	Part Name	Part No.
C 201		CEJA2R2M50
C 202		CEJA2R2M50
C 203		CEJA1R0M50
C 204		CEJA1R0M50
C 205		CEJA4R7M35
C 206		CEJA4R7M35
C 207		CEJA100M16
C 208		CEJA100M16
C 209		CKSQYB822K50
C 210		CKSQYB822K50
C 211		CEJA1R0M50
C 212		CEJA1R0M50
C 213		CKSQYB183K25
C 214		CKSQYB183K25
C 215		CKSQYB102K50
C 216		CKSQYB102K50
C 217		CEJA2R2M50
C 218		CEJA2R2M50
C 219		CKSQYB333K25
C 220		CKSQYB333K25
C 221		CEJA220M10
C 222		CEJA220M10
C 223		CKSQYF104Z25
C 225		See Contrast table
C 229		CEJA2R2M50
C 230		CEJA2R2M50
C 236		See Contrast table
C 309		See Contrast table
C 310		CKSQYB104K16
C 311		CKSQYB224K16
C 312		CKSQYB224K16
C 313		CKSQYB224K16
C 314		CKSQYB224K16
C 315		CEJA100M16
C 316		CKSQYB224K16
C 317		CEJA1R0M50
C 318		CEJA330M10
C 401		CKSQYB223K25
C 402		CKSYB273K25
C 406		CCSQSL101J50
C 407		CKSQYB102K50
C 408		CEJA220M16
C 409		CKSQYB103K25
C 410		CEJA220M6R3
C 411		CEJA220M16
C 412		CKSQYB103K25
C 413		CKSQYB103K25
C 415		CKSQYB103K25
C 416		CKLSR473K16
C 418		CKSQYB103K25
C 419		See Contrast table
C 420		CKSQYB103K25
C 421		CKSQYB103K25
C 422		CEJA220M6R3
C 423		CKSQYB473K16
C 424	4.7µF/16V	CCH1250
C 425		CKSQYB103K25
C 429		CCSQCH150J50
C 430		CCSQCH150J50
C 431		CCSQSL101J50
C 432		CKSQYB103K25
C 439		CKSQYB473K25
C 440		CKSQYB473K25
C 442		CKSQYB102K50
C 443		CKSQYB154K16
C 601		See Contrast table
C 602		See Contrast table
C 606		CEJA100M16
C 607		See Contrast table
C 612		CEAL2R2M50

Circuit Symbol and No.	Part Name	Part No.
C 613		CKSYB102K50
C 614		CCSQSL101J50
C 615		CEJA4R7M35
C 618		CKSQYB223K25
C 619		CKSQYB473K16
C 622		CEJA220M10
C 624		CKSYB102K50
C 672		See Contrast table
C 751		CEJA1R0M50
C 752		CEJA1R0M50
C 753		CEJA1R0M50
C 754		CEJA1R0M50
C 755		CEJA100M16
C 756		CEJA100M16
C 757		CKSQYB102K50
C 758		CKSQYB104K16
C 951	470µF/16V	CCH1183
C 952		CEJA470M10
C 953		CEAS101M10
C 954		CKSQYB103K25
C 956		CKSQYB103K25
C 957		CKSQYB103K25
C 958		CEAS101M10
C 960		CKSQYB472K50

CONTRAST TABLE of TUNER AMP UNIT

KEH-P424/X1M/UC, KEH-P4700/X1M/UC and KEH-P4750/X1M/ES have the same construction except for the following:

Symbol and Description		Part No.		
		KEH-P424/X1M/UC	KEH-P4700/X1M/UC	KEH-P4750/X1M/ES
FM/AM Tuner Unit		CWE1467	CWE1467	CWE1486
IC 301	IC	TDA7386	TDA7384	TDA7384
IC 601	IC	PD4915A	PD4917A	PD4917A
IC 602	IC	TPD1018F	Not used	Not used
D 612,613	Diode	1SR139-400	Not used	Not used
D 614	Diode	BR4361F	Not used	Not used
Q 604	Transistor	2SA933S	Not used	Not used
Q 605	Transistor	DTC124EK	Not used	Not used
Q 606	Transistor	2SC1740S	Not used	Not used
R 217,612		RS1/10S103J	Not used	Not used
R 218		RS1/8S102J	Not used	Not used
R 406		Not used	Not used	RD1/4PU182J
R 407		RS1/10S0R0J	RS1/10S0R0J	Not used
R 611		RS1/10S751J	Not used	Not used
R 613,614,615		RS1/10S223J	Not used	Not used
R 616		RS1/10S272J	Not used	Not used
R 617		RS1/10S473J	Not used	Not used
R 627		RD1/4PU103J	Not used	Not used
R 664		RD1/4PU102J	Not used	Not used
R 716		RS1/10S473J	RS1/10S473J	Not used
R 717		RS1/10S273J	Not used	RS1/10S473J
C 225,236		CKSQYB473K16	Not used	Not used
C 309		CCH1188(4700µF/16V)	CCH1018(3300µF/16V)	CCH1018(3300µF/16V)
C 419		Not used	Not used	CKSQYB103K25
C 601,602		CKSQYB103K25	Not used	Not used
C 607		CCSQSL101J50	CCSQSL101J50	Not used
C 672		CKSQYB472K50	Not used	Not used

=====Circuit Symbol and No.	===Part Name	Part No.

D Unit Number : EWM1016
Unit Name : Deck Unit

MISCELLANEOUS

IC	251	IC	CXA2560Q
IC	351	IC	PA2020A
Q	351	Transistor	2SB1260
Q	352	Transistor	2SC4102
D	351	Diode	1SS355
VR	301	Semi-fixed 33kΩ(B)	CCP1280
VR	302	Semi-fixed 33kΩ(B)	CCP1280

RESISTORS

R	255		RS1/16S221J
R	256		RS1/16S221J
R	257		RS1/16S102J
R	258		RS1/16S102J
R	271		RS1/16S102J
R	272		RS1/16S102J
R	273		RS1/16S102J
R	281		RS1/8S0R0J
R	282		RS1/8S0R0J
R	283		RS1/8S0R0J
R	284		RS1/8S0R0J
R	285		RS1/16S0R0J
R	286		RS1/16S0R0J
R	287		RS1/8S0R0J
R	290		RS1/8S0R0J
R	301		RS1/16S183J
R	322		RS1/16S102J
R	351		RS1/16S102J
R	352		RS1/16S102J
R	353		RS1/16S102J
R	354		RS1/16S102J
R	355		RS1/10S274J
R	356		RS1/10S202J
R	357		RS1/10S472J
R	358		RS1/10S103J
R	359		RS1/10S103J
R	360		RS1/10S102J
R	361		RS1/10S622J
R	362		RS1/8S181J
R	373		RS1/8S0R0J
R	374		RS1/8S0R0J
R	375		RS1/8S0R0J
R	401		RS1/16S472J
R	402		RS1/16S163J
R	403		RS1/16S823J

CAPACITORS

C	251		CKSRYB331K50
C	252		CKSRYB331K50
C	253		CKSRYB331K50
C	254		CKSRYB331K50
C	255		CKSRYB103K25
C	256		CKSRYB103K25
C	272		CKSQYB104K16
C	273		CEJA220M16
C	301		CKSYB104K50
C	302		CKSYB104K50
C	309		CKSQYB104K16
C	310		CKSQYB104K16
C	313		CCSQCH101K50
C	351		CKSYB224K25
C	352		CKSQYB392K50
C	353		CKSQYB103K50
C	354		CKSQYB103K50
C	355		CKSYB104K50
C	356		CKSQYB103K50
C	401		CKSQYB334K16
C	402		CKSQYB472K50
C	403		CKSQYB683K16

=====Circuit Symbol and No.	===Part Name	Part No.

C Unit Number : CWM5801
Unit Name : Keyboard Unit

MISCELLANEOUS

IC	901	IC	PD6247A
Q	901	Transistor	2SC2412K
D	901	Chip Diode	MA151WK
D	902	Diode	MA151WA
D	903	LED	NSPWF50SB
D	904	LED	NSPWF50SB
D	905	LED	NSPWF50SB
D	906	LED	CL170PGCD
D	907	LED	CL170PGCD
D	908	LED	CL170PGCD
D	909	LED	CL170PGCD
D	910	LED	CL170PGCD
L	901	Inductor	LCTA101J3225
X	901	Ceramic Resonator 4.97MHz	CSS1312
S	901	Switch	CSG1043
S	902	Switch	CSG1043
S	903	Switch	CSG1043
S	904	Switch	CSG1041
S	905	Switch	CSG1084
S	906	Switch	CSG1085
S	907	Switch	CSG1041
S	908	Switch	CSG1084
S	909	Switch	CSG1041
S	910	Switch	CSG1085
S	911	Switch	CSG1086
S	912	Switch	CSG1086
S	913	Switch	CSG1086
S	914	Switch	CSG1086
S	915	Switch	CSG1085
S	916	Switch	CSG1084
S	917	Switch	CSG1085
S	918	Switch	CSG1084
S	919	Switch	CSG1085
S	920	Switch	CSG1084
S	921	Switch	CSG1085
IL	901	Lamp 14V 40mA	CEL1558
LCD	901	LCD	CAW1477

RESISTORS

R	901		RS1/10S222J
R	902		RS1/10S222J
R	903		RS1/10S472J
R	906		RS1/10S470J
R	907		RS1/10S470J
R	908		RS1/4S511J
R	909		RS1/4S751J
R	910		RS1/4S391J
R	911		RS1/4S391J
R	912		RS1/4S391J
R	913		RS1/4S391J
R	914		RS1/4S391J
R	915		RS1/4S391J
R	916		RS1/4S391J
R	917		RS1/4S391J

=====Circuit Symbol and No.		===Part Name	Part No.
R	918		RS1/10S472J
R	919		RS1/4S391J
R	920		RS1/10S473J
CAPACITORS			
C	901		CSZSR100M6R3
C	902		CKSQYF104Z50
C	904		CKSQYB103K25
C	905		CKSQYB103K25
C	906		CKSQYB103K25
C	907		CKSQYF104Z50
C	908		CKSQYF104Z50
C	909		CKSQYF104Z50

=====Circuit Symbol and No.		===Part Name	Part No.
E	Unit Number :		
	Unit Name :	PCB Unit	
S	1	Switch (Load)	ESG1004
S	2	Switch (70µS)	ESG1004
EGN	1	Photo-Interrupter	EGN1005
F	Unit Number :		
	Unit Name :	Reel PCB	
EGN	2	Photo-Interrupter	EGN1006
EGN	3	Photo-Interrupter	EGN1006
Miscellaneous Parts List			
M	1	Motor Unit (Main)	EXA1544
M	2	Motor Unit (Sub)	EXA1485
HD	1	Head Assy	EXA1506

6. ADJUSTMENT

● **Connection Diagram**

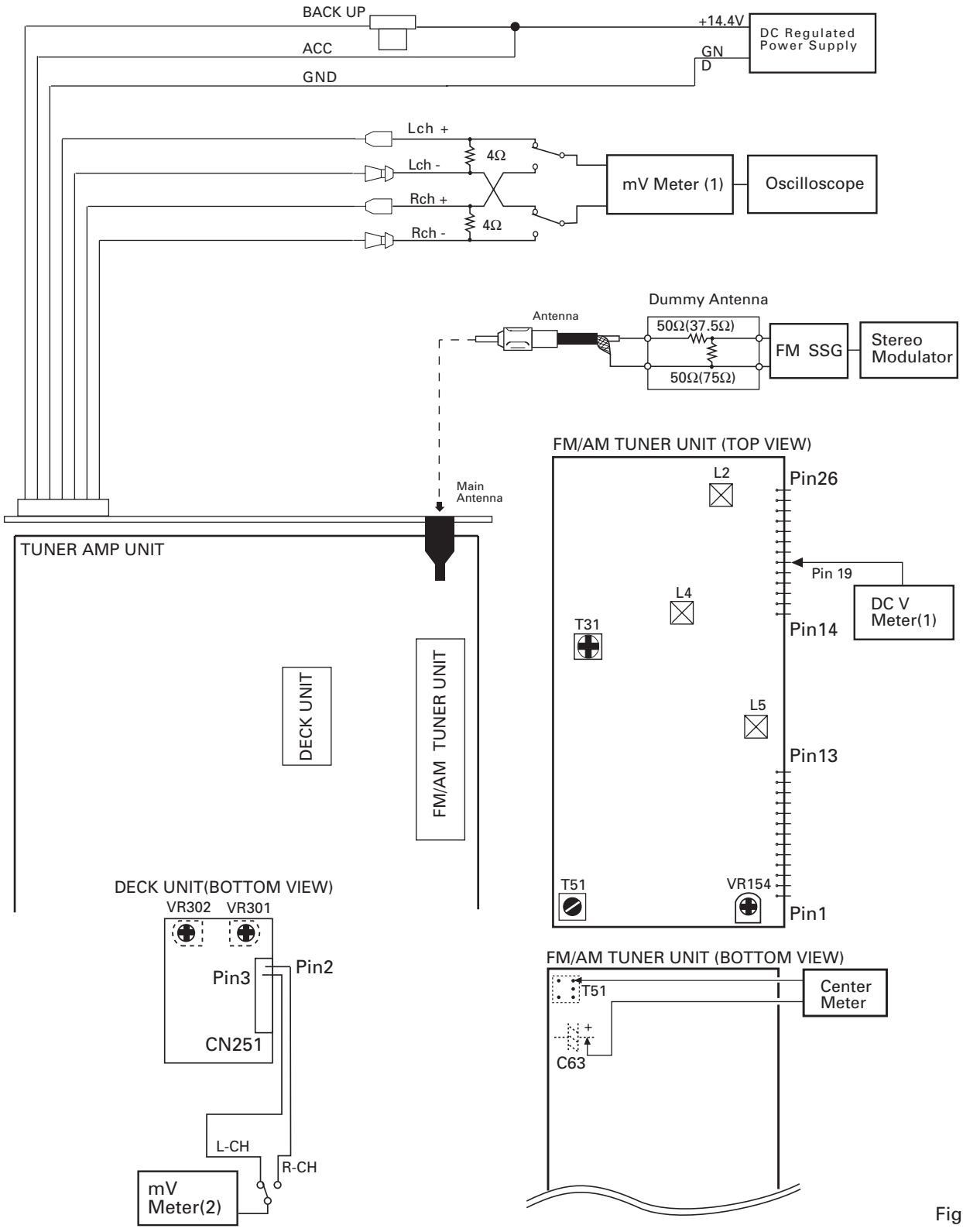


Fig. 20

Modulation M:MONO MOD., 400Hz 30%(22.5kHz Dev.) or 400Hz 100%(75kHz Dev.)
S:STEREO MOD., 1kHz, L or R=30%(20.25kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

FM ADJUSTMENT(KEH-P424/X1M/UC,P4700/X1M/UC)

	No.	FM SSG		Displayed	Adjustment	Adjustment Method
		Frequency(MHz)	Level(dBf)	Frequency(MHz)	Point	(Switch Position)
TUN Volt	1	•••••	•••••	107.9	L5	DC V Meter(1) : 6V
IF	2	98.1 M	60	98.1	T51	Center Meter : 0
ANT Coil	3	98.1 M	5	98.1	L2	mV Meter(1) : Maximum
RF Coil	4	98.1 M	5	98.1	L4	mV Meter(1) : Maximum
IFT	5	98.1 M	5	98.1	T31	mV Meter(1) : Maximum (STEREO MODE)
ARC	6	98.1 S	40	98.1	VR154	mV Meter(1) : Separation 5dB (STEREO MODE)

FM ADJUSTMENT(KEH-P4750/X1M/ES)

	No.	FM SSG		Displayed	Adjustment	Adjustment Method
		Frequency(MHz)	Level(dBf)	Frequency(MHz)	Point	(Switch Position)
TUN Volt	1	•••••	•••••	108.0	L5	DC V Meter(1) : 6V
IF	2	98.1 M	60	98.1	T51	Center Meter : 0
ANT Coil	3	98.1 M	5	98.1	L2	mV Meter(1) : Maximum
RF Coil	4	98.1 M	5	98.1	L4	mV Meter(1) : Maximum
IFT	5	98.1 M	5	98.1	T31	mV Meter(1) : Maximum (STEREO MODE)
ARC	6	98.1 S	40	98.1	VR154	mV Meter(1) : Separation 5dB (STEREO MODE)

DOLBY B NR ADJUSTMENT

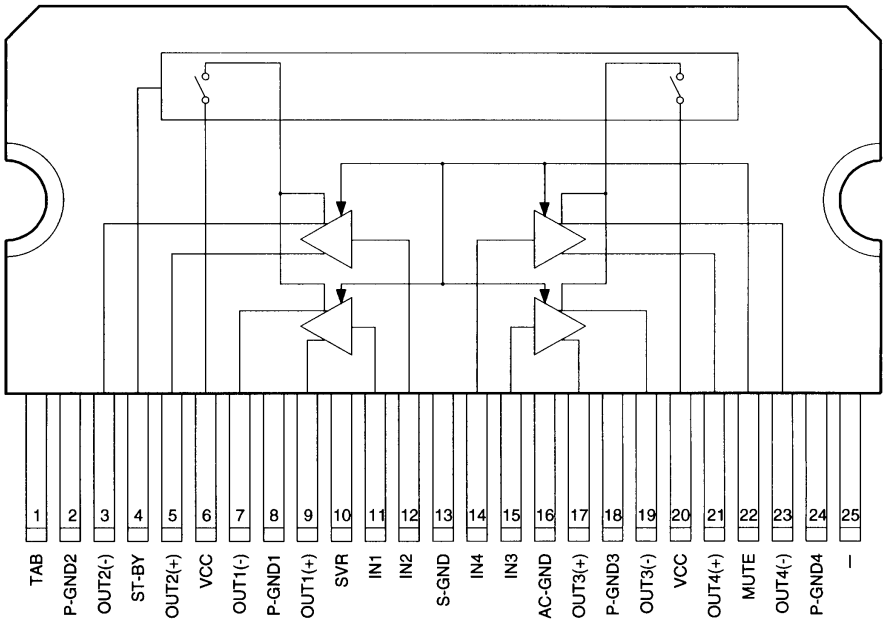
No.	Test Tape	Adjustment Point	Adjustment Method (Switch Position)
1	NCT-150 (400Hz,200nwb/m)	VR301(Lch),VR302(Rch)	mV Meter(2) : –6dBs±1.0dB (DOLBY NR Switch : OFF)

7. GENERAL INFORMATION

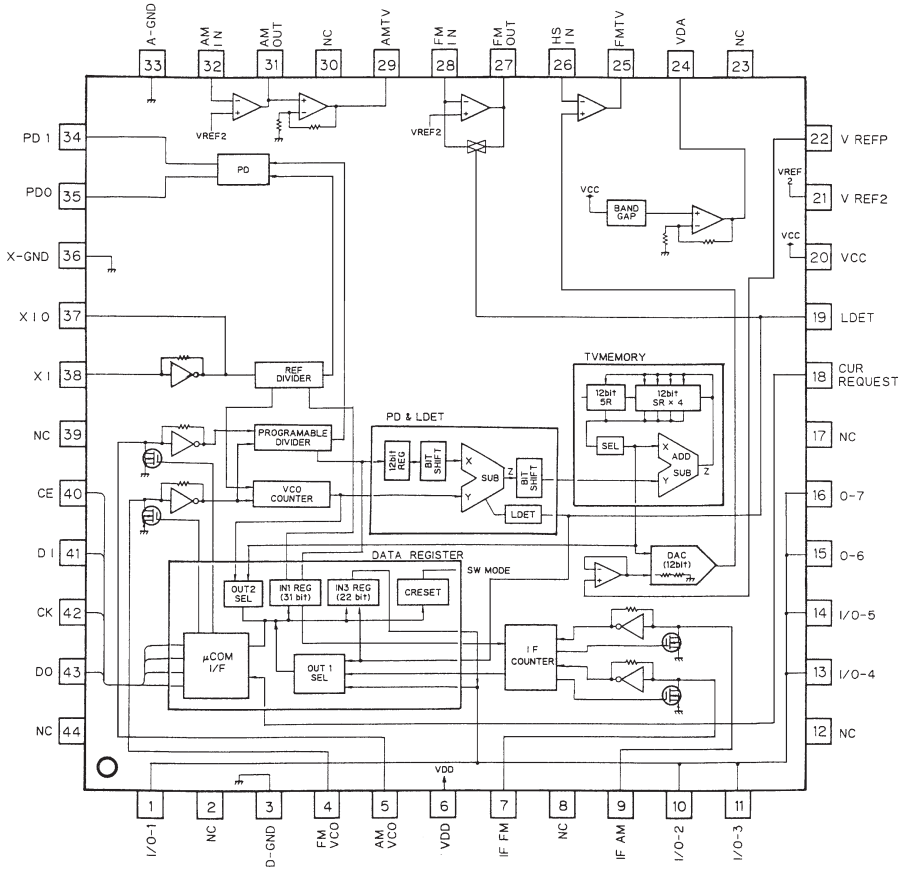
7.1 PARTS

7.1.1 IC

TDA7384,TDA7386



PM2006A

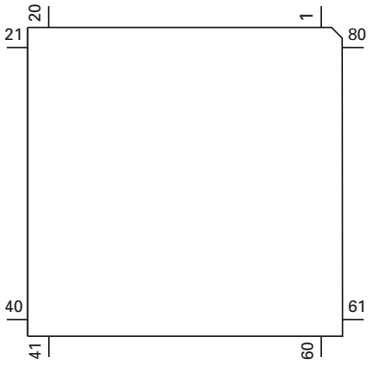


● **Pin Functions (PD4915A): KEH-P424/X1M/UC)**
(PD4917A): KEH-P4700/X1M/UC, P4750/X1M/ES)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	ASENBO	O	C	Slave power supply control output
2	NC			Not used
3	ADPW	O	C	A/D converter power
4	AVSS			A/D GND
5	FIEOUT			Not used
6	$\overline{ST}$	I		FM stereo input
7	AVREF1			(Connect to VDD)
8	KYDT	I		Key data input
9	DPDT	O	C	Display data output
10	$\overline{SWVDD}$	O	C	Key board unit power supply control output
11	TUNPD1	I		PLL IC data input
12	TUNPD0	O	C	PLL IC data output
13	TUNPCK	O	C	PLL IC clock
14	TUNPCE	O	C	PLL IC chip enable
15,16	NC			Not used
17	TX	O	C	IP BUS data output
18,19	NC			Not used
20	DRELAY	O	C	External relay output
21	EORR			Not used
22	EVST	O	C	Electric volume strobe output
23	EVCK	O	C	Electric volume serial clock output
24	EVDT	O	C	Electric volume serial data output
25	LCDPW			Not used
26	DRSYS	O	C	Door system select output
27	DRSENS	I		Door open/close sense input
28	ILPW	O	C	Illumination power
29	FM	O	C	FM power control output
30	AM	O	C	AM power control output
31	NR	O	C	NR output
32	CM	O	C	Cassette mechanism capstan motor control output
33	VSS			GND
34	SC2	O	C	Cassette mechanism sub motor control output
35	SC1	O	C	Cassette mechanism sub motor control output
36	MS	I		Cassette mechanism MS sense input
37	NC			Not used
38	$\overline{MTL}$	I		Cassette mechanism tape select input
39	$\overline{DLED}$	O	N	Alarm LED output
40	$\overline{N}$/R	O	C	Normal reverse output
41	PLAY	O	N	Tape MS filter select output
42	$\overline{LOADSW}$	I		Tape loading input
43	POS	I		Cassette mechanism position sense input
44	RES	I		Cassette mechanism reverse end sense input
45	PEE	O	C	Beep tone output
46	NES	I		Cassette mechanism forward end sense input
47	NC			Not used
48	STBY	O	C	Stand-by output
49–52	NC			Not used
53	SD	I		SD input
54	$\overline{MUTE}$	O	C	System mute output
55	SYSPW	O	C	System power supply control output
56–59	NC			Not used
60	$\overline{RESET}$	I		Reset input
61	RX	I		IP BUS data input
62	NC			Not used
63	$\overline{DSENS}$	I		Grille detach sense
64	$\overline{ISENS}$			Not used
65	$\overline{ASENS}$	I		ACC power sense input

Pin No.	Pin Name	I/O	Format	Function and Operation
66	$\overline{\text{BSENS}}$	I		Back up power sense input
67	CLKIN	I		Clock input
68	VDD			Power supply
69	X2			Oscillator output
70	X1			Oscillator input
71	IC			GND
72	NC			Not used
73	TESTIN	I		Test program mode input
74	AVDD	I		A/D converter analogue power
75	AVREF0	I		A/D converter standard voltage input
76	SL	I		Signal level input
77	CL	I		Synchronizing signal input of display data latch
78–80	NC			Not used

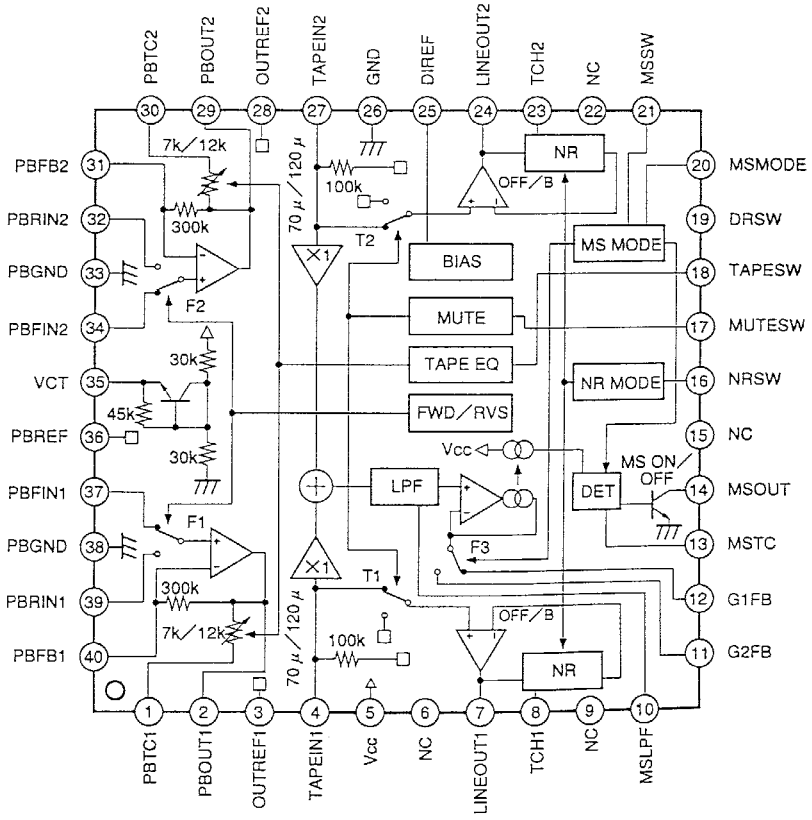
*PD4915A,*PD4917A



IC's marked by* are MOS type.
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

Format	Meaning
C	C MOS
N	N Channel open drain

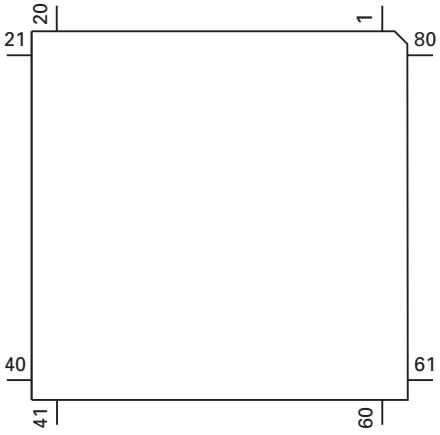
CXA2560Q



● **Pin Functions(PD6247A)**

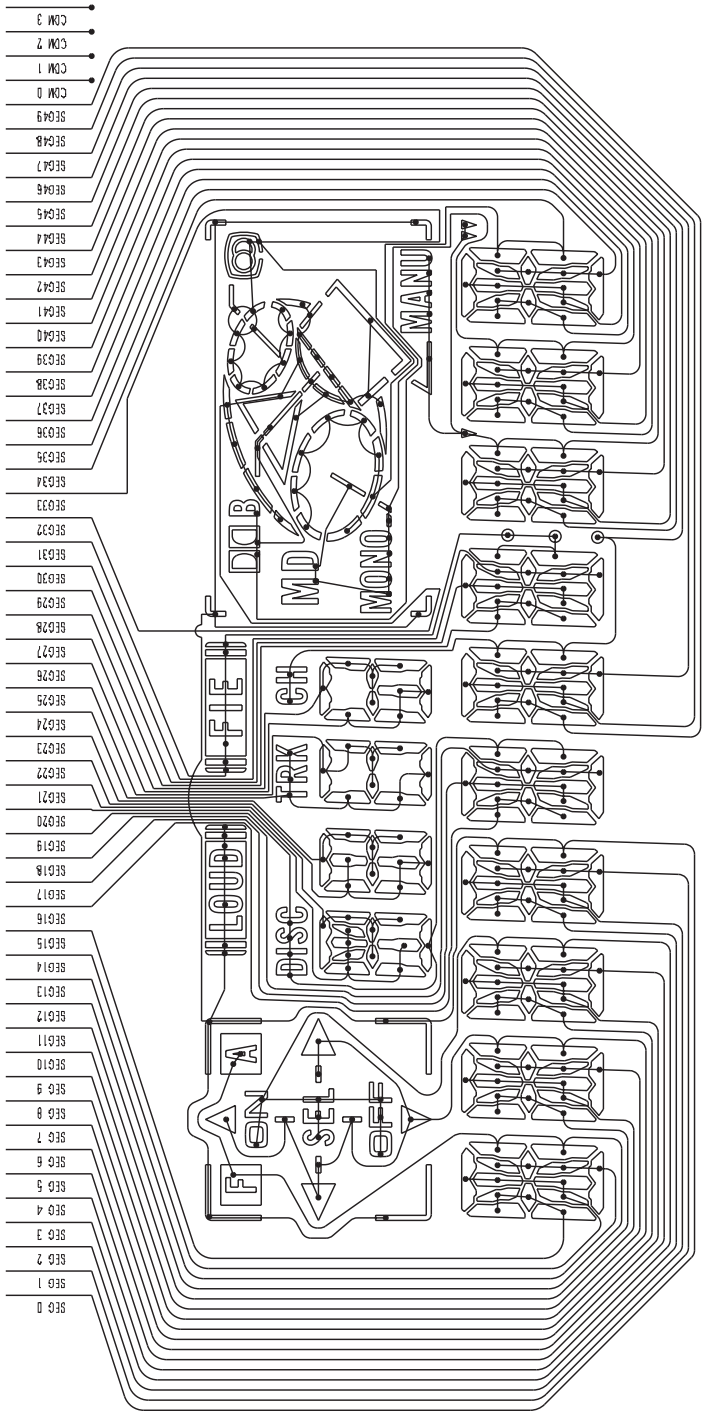
Pin No.	Pin Name	I/O	Function and Operation
1	VSS		GND
2	X1		Crystal oscillator connection pin
3	X0		Crystal oscillator connection pin
4	$\overline{\text{RST}}$	I	System reset
5,6	MODE1,0		GND
7	$\overline{\text{DIM}}$	O	Dimmer select output
8	SO	O	UART output
9	SI	I	UART input
10	REMIN	I	Remote control reception
11	RVER		Not used
12	NC		Not used
13–16	KDT4–1	I	Key data input
17–22	KST6–1	O	Key strobe output
23	VCC		5V
24–73	SEG49–0	O	LCD segment output
74–77	COM3–0	O	Common driver output
78–80	V3–1		LCD bias power supply

*PD6247A



7.1.2 DISPLAY

● **CAW1477**



SEGMENT

COMMON

Fig. 21

7.2 DISASSEMBLY

● **Removing the Case(not shown)**

1. Remove the three screws.
2. Remove the Case.

● **Removing the Cassette Mechanism Module (not shown)**

1. Remove the four screws.
2. Disconnect the connector, and then removing the Cassette Mechanism Module.

● **Removing the Detach Grille Assy(Fig.22)**

1. Push the detach button.
2. Remove the Detach Grille Assy.

● **Removing the Panel Unit(Fig.22)**

1. Disengage the stopper at four locations indicated by white-arrows and then remove the Panel.
2. Disengage the stopper at two locations indicated by black-arrows.
3. Remove the Panel Unit.

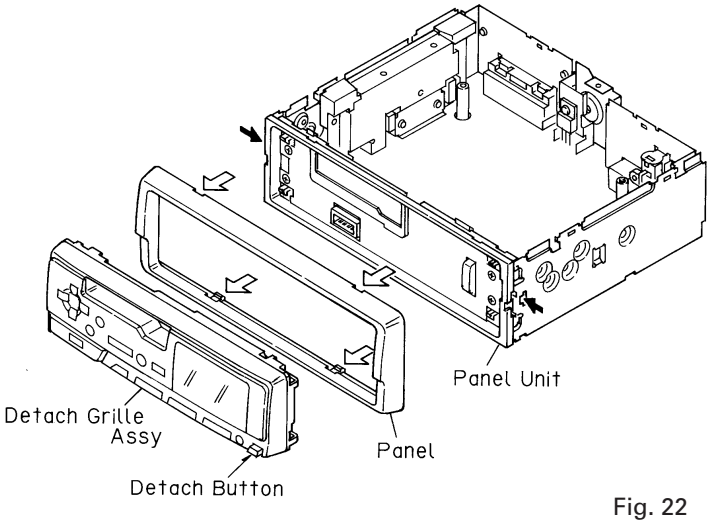


Fig. 22

● **Removing the Tuner Amp Unit(Fig.23)**

1. Removing the two screws A, three screws B and screw C.
2. Unbend the tabs at four locations indicated by arrow until straight.
3. Remove the Tuner Amp Unit.

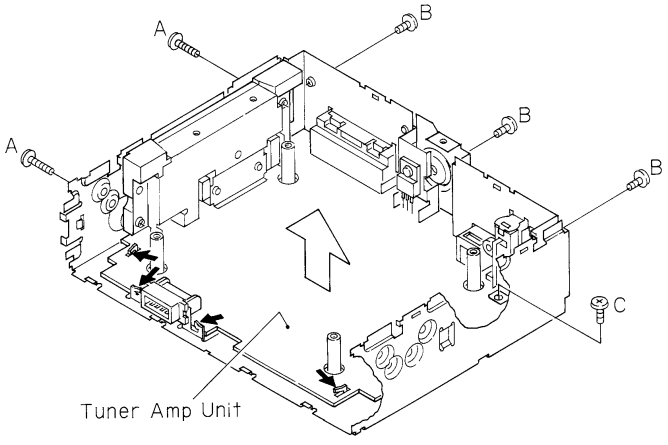


Fig. 23

7.3 BLOCK DIAGRAM

● KEH-P424/X1M/UC

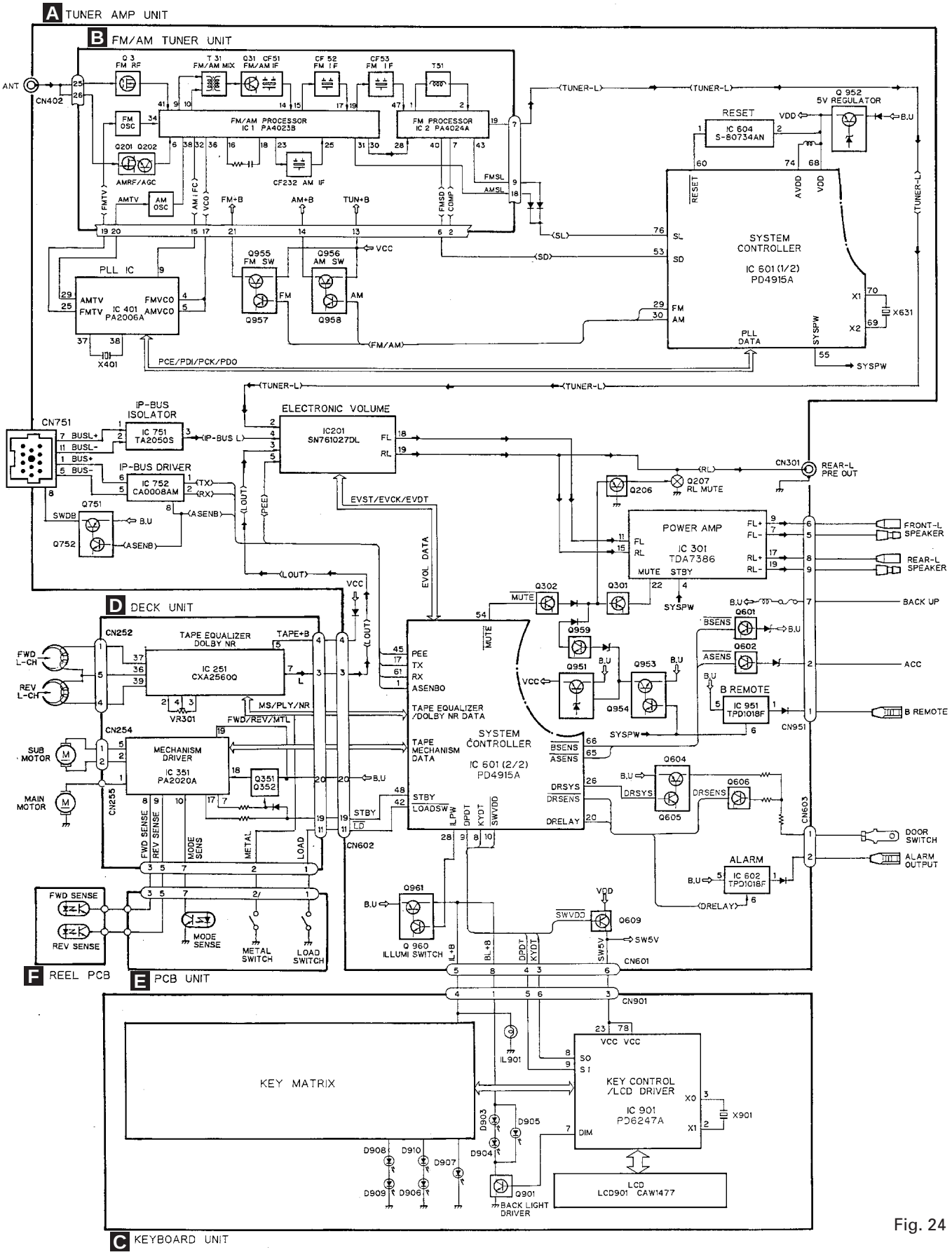


Fig. 24

8. OPERATIONS AND SPECIFICATIONS

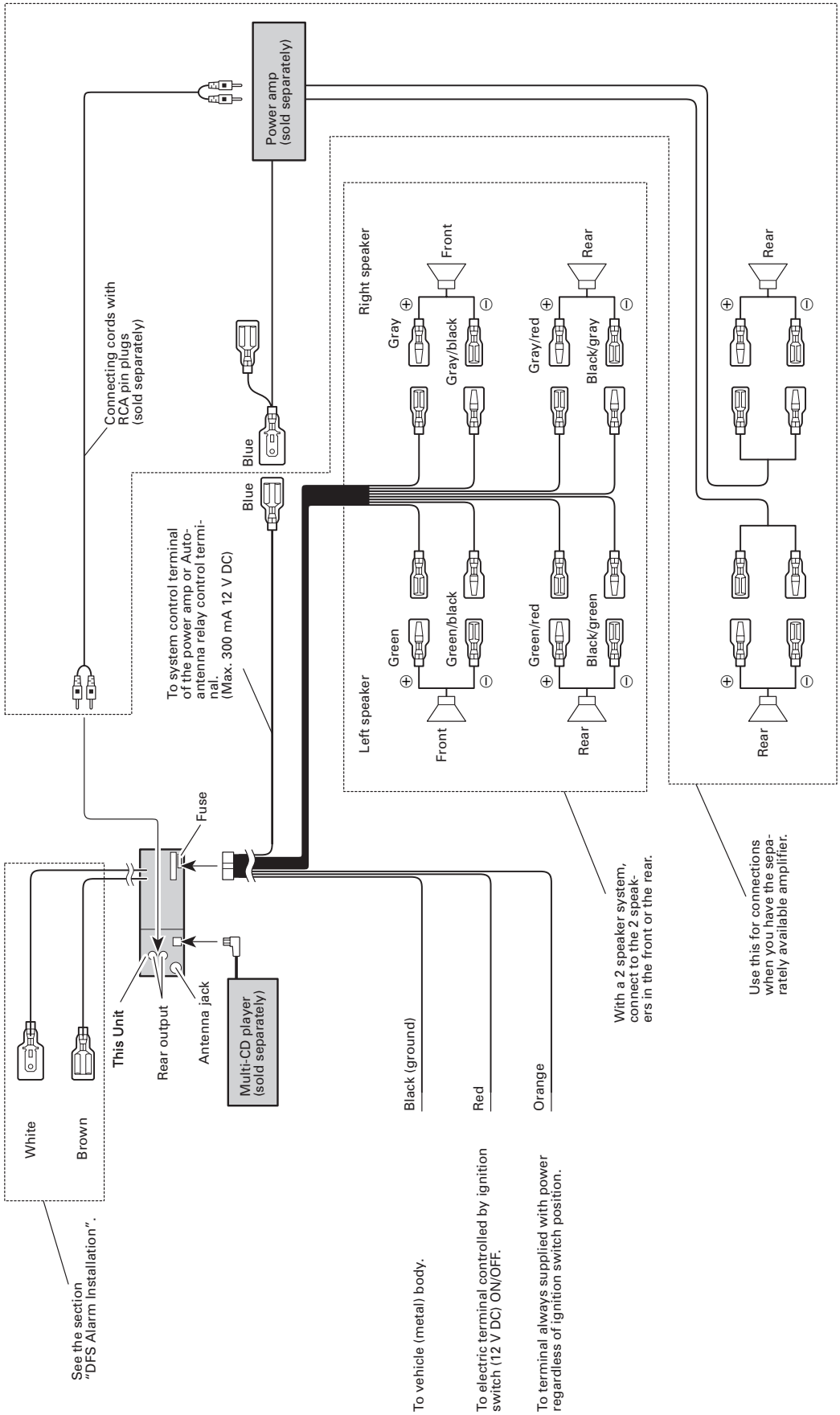
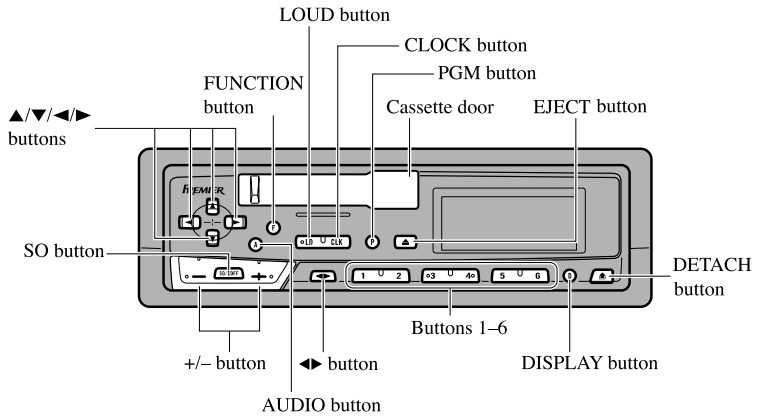


Fig. 25

Key Finder

Head Unit



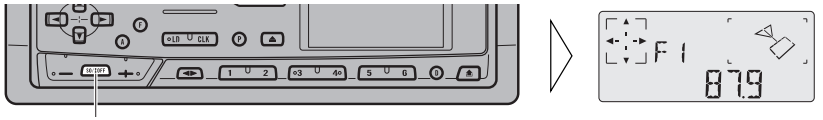
Basic Operation

To Listen to Music

The following explains the initial operations required before you can listen to music.

Note:
- Loading a cassette in this product.

1. Select the desired source. (e.g. tuner)



Each press changes the Source ...

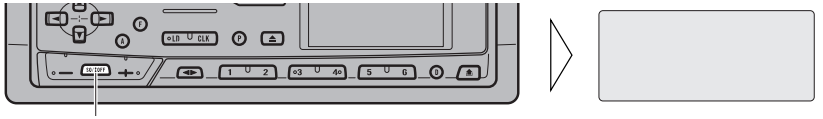
■ Head Unit

Each press of the SO button selects the desired source in the following order:
CD player (one disc only) → Tuner → Tape → Multi-CD player → AUX

Note:
- In the following cases, the sound source will not change:
  * No Multi-CD player is connected to this product. (When "M-CD" display is OFF.)
  * No CD player is connected to this product.
  * No cassette tape is set in this product.
  * No magazine is set in the Multi-CD player.
  * No disc is set in the CD player.
  * AUX (external input) is set to OFF.

2. Raise or lower the volume.

3. Turn the source OFF.



Hold for 1 second or more

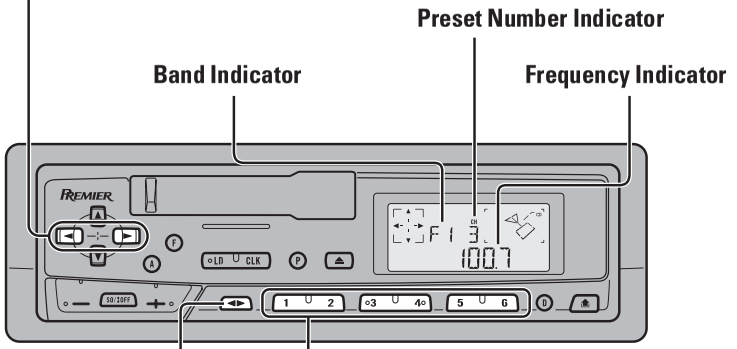
Basic Operation of Tuner

Manual and Seek Tuning

- **You can select the tuning method by changing the length of time you press the ◄/► button.**

Manual Tuning (step by step)	0.3 seconds or less
Seek Tuning (automatically)	0.3 – 2 seconds
Manual Tuning (continuously)	2 seconds or more

Note:
- "◯◯" stereo indicator lights when a stereo station is selected.



- **You can memorize broadcast stations in buttons 1 through 6 for easy, one-touch station recall.**

Preset station recall	2 seconds or less
Broadcast station preset memory	2 seconds or more

Note:
- Up to 18 FM stations (6 in F1 (FM1), F2 (FM2) and F3 (FM3)) and 6 AM stations can be stored in memory.
- You can also use the ▲ or ▼ buttons to recall broadcast stations memorized in buttons 1 through 6.

Basic Operation of Cassette Player

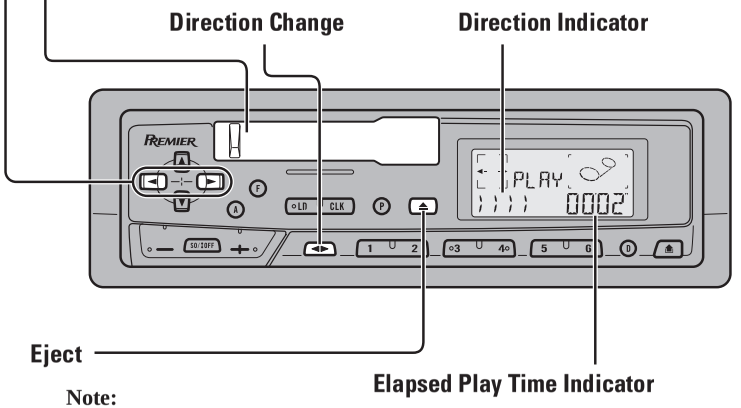
Fast Forward/Rewind and Music Search

- **Each press of the ◄ button selects Rewind or Rewind-Music Search.**
  REW (Rewind) → R-MS (Rewind-Music Search) → Normal Playback
- **Each press of the ► button selects Fast forward or Forward-Music Search.**
  FF (Fast forward) → F-MS (Forward-Music Search) → Normal Playback

Note:
- Fast forward/Rewind and Music Search can be canceled by pressing the ◄► button.

Cassette Loading Slot

Note:
- "METAL" appears on the display for 2 seconds when a metal or chrome tape is inserted. Nothing is displayed for a normal tape.



Note:
- The Tape function can be turned ON/OFF with the cassette tape remaining in this product.

Note:
- The continuous playback time count starts at 00'00" at the following times.
  * When a tape is inserted.
  * When the tape direction is changed.
  * When you rewind the tape side currently playing back to the beginning.
- The continuous playback time count is halted when fast forwarding/rewinding and while the Music Search function is operating.

Basic Operation of Multi-CD Player

This product can control one or more multi-CD players. (There are some types of Multi-CD players such as CDX-P630S, which you cannot connect more than one.)

Switching the Multi-CD Player

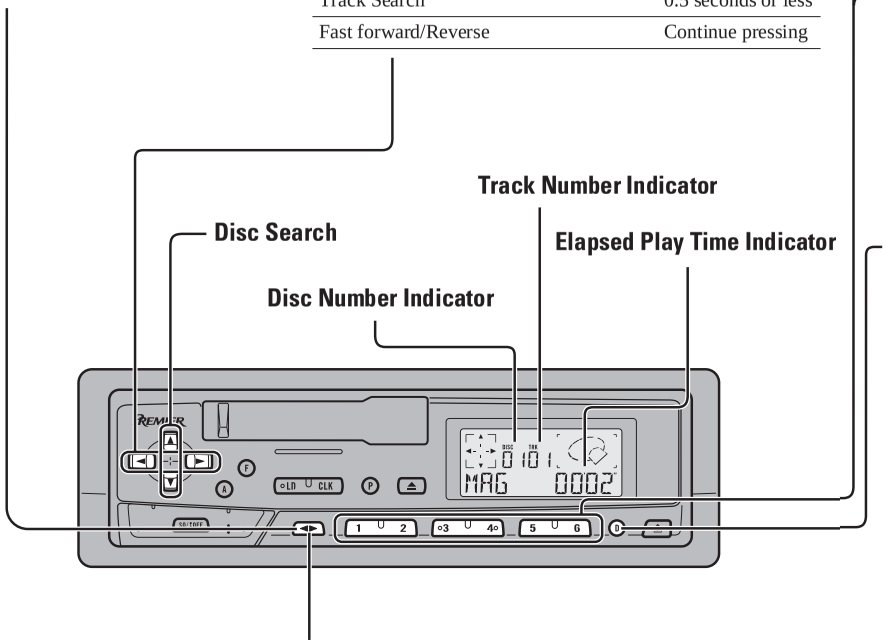
Using a multiple connection adapter lets you connect up to three Multi-CD players.

M-CD 1 → M-CD 2 → M-CD 3
(Displayed for about 2 seconds.)

Track Search and Fast forward/Reverse

- **You can select between Track Search or Fast forward/Reverse by pressing the ◄/► button for a different length of time.**

Track Search	0.5 seconds or less
Fast forward/Reverse	Continue pressing



Ejecting a Single Disc (for 50-Disc type only)

- **Press the ◄► button for 2 seconds or more, and you can eject the currently playing disc from the extra tray.**

(Refer to the operation manual for the 50-Disc type Multi-CD player for details concerning disc ejection from the extra tray.)

Note:
- This function does not operate if a disc is already loaded in the extra tray.

Disc Number Search (for 6-Disc, 12-Disc types)

- **You can select discs directly with the 1 to 6 buttons. Just press the number corresponding to the disc you want to listen to.**

Note:
- When a 12-Disc Multi-CD Player is connected and you want to select disc 7 to 12, press the 1 to 6 buttons for 2 seconds or longer.

Disc Number Rough Search (for 50-Disc type only)

This handy function lets you select discs loaded in a 50-Disc Multi-CD Player using the 1 to 5 buttons. The 50 discs are divided into five blocks, with each of the 1 to 5 buttons assigned to a block.

- **Select the desired block with the 1 to 5 buttons.**

Note:
- After completing a rough search, use the ▲ and ▼ buttons to select a desired disc.

Switching between Displays

- **Each time you press the DISPLAY button, the display switches between Disc Title and Group indications for the disc currently playing.**

Playback mode (Elapsed play time) → Disc Title → Music Group

Note:
- Music Group display is a 50-Disc type Multi-CD player function. You cannot switch to this display with 6-Disc and 12-Disc type Multi-CD players.
- If you switch displays when disc titles have not been input or when discs have not been allocated to a music group, “NO TITLE” or “NO GROUP” is displayed for about 8 seconds.

Note:
- The multi-CD player may perform a preparatory operation, such as verifying the presence of a disc or reading disc information, when the power is turned ON or a new disc is selected for playback. “READY” is displayed.
- When a magazine is loaded into a 50-Disc type Multi-CD Player, information on all the discs in the magazine is read.
  If you start playing a disc on a 50-Disc type Multi-CD Player before reading of information on all discs has been completed, reading of information stops part way through. This will prevent you from using a number of functions. (If you try and use these functions, “NOT READY” is displayed.)
  If this happens, reading of information begins again when you switch to a component other than the 50-Disc type Multi-CD Player.
- If the multi-CD player cannot operate properly, an error message such as “ERROR-14” is displayed. Refer to the multi-CD player owner’s manual.
- If there are no discs in the multi-CD player magazine, “NO DISC” is displayed.
- “LOAD” will be displayed in the following cases:
  * If the disc in the extra tray in selected.
  * If the disc in moved from the extra tray to the magazine.
  (Refer to the 50-Disc type multi-CD player owner’s manual.)

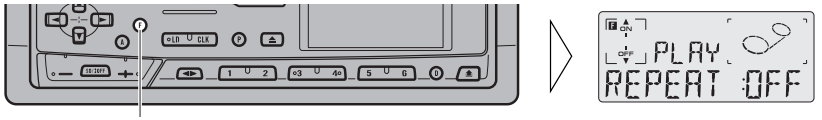
Entering the Function Menu

The Function Menu lets you operate simple functions for each source.

Note:

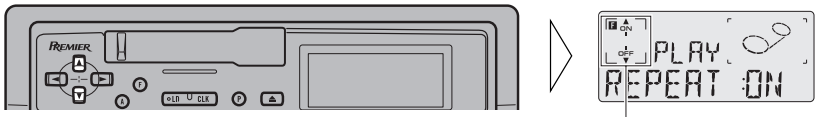
- After entering the Function Menu, if you do not perform an operation within about 30 seconds, the Function Menu is automatically canceled.

1. Select the desired mode in the Function Menu.



Each press changes the Mode ...

2. Operate a mode. (e.g. Repeat Play)



The button used and the operation it performs are indicated by the key guidance indicator. Press the ▲ button to switch the key guidance indicator ON, and the ▼ button to switch it OFF.

3. Cancel the Function Menu.

8.2 SPECIFICATIONS

General

Power source ..... 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption (KEH-P424/X1M/UC)..... 10.0 A
(KEH-P4700/X1M/UC, P4750/X1M/ES) 8.5 A
Dimensions
(DIN) (chassis) .... 178 (W) × 50 (H) × 153 (D) mm
[7 (W) × 2 (H) × 6 (D) in.]
(nose) ..... 188 (W) × 58 (H) × 19 (D) mm
[7-3/8 (W) × 2-1/4 (H) × 3/4 (D) in.]
(D) (chassis) .... 178 (W) × 50 (H) × 158 (D) mm
[7 (W) × 2 (H) × 6-1/4 (D) in.]
(nose) ..... 170 (W) × 48 (H) × 14 (D) mm
[6-3/4 (W) × 1-7/8 (H) × 1/2 (D) in.]
Weight ..... 1.2 kg (2.6 lbs)

Amplifier

Continuous power output is 20 W (KEH-P424/X1M/UC) or 17 W (KEH-P4700/X1M/UC, P4750/X1M/ES) per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.
Maximum power output (KEH-P424/X1M/UC) .... 40 W × 4
(KEH-P4700/X1M/UC, P4750/X1M/ES) .... 35 W × 4

Load impedance ..... 4 Ω (4 – 8 Ω allowable)
Preout output level/output impedance ..... 500 mV/1 kΩ
Tone controls
(Bass)
(KEH-P424/X1M/UC, P4700/X1M/UC) ±12 dB (100 Hz)
(KEH-P4750/X1MES) ..... +8 — –16 dB (100 Hz)
(Treble) ..... ±12 dB (10 kHz)
Loudness contour ..... +10 dB (100 Hz), +7 dB (10 kHz)
(volume: –30 dB)

Cassette player

Tape ..... Compact cassette tape (C-30 – C-90)
Tape speed .... 4.76 cm/sec.(+0.14 cm/sec.,–0.05 cm/sec.)
Fast forward/rewinding time .. Approx. 100 sec. for C-60
Wow & flutter ..... 0.09% (WRMS)
Frequency response ..... Metal: 30 – 19,000 Hz (±3 dB)
Stereo separation ..... 45 dB
Signal-to-noise ratio
..... Metal: Dolby B NR IN: 67 dB (IHF-A network)
Dolby NR OUT: 61 dB (IHF-A network)

FM tuner

Frequency range
(KEH-P424/X1M/UC, P4700/X1M/UC).... 87.9 – 107.9 MHz
(KEH-P4750/X1M/ES) ..... 87.5 – 108 MHz
Usable sensitivity ..... 11 dBf
(1.0 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity .... 16 dBf (1.7 μV/75 Ω, mono)
Signal-to-noise ratio ..... 70 dB (IHF-A network)
Distortion ..... 0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 30 – 15,000 Hz (±3 dB)
Stereo separation ..... 40 dB (at 65 dBf, 1 kHz)
Selectivity
(KEH-P424/X1M/UC, P4700/X1M/UC) ..... 70 dB (2ACA)
Three-signal intermodulation
(KEH-P424/X1M/UC, P4700/X1M/UC)
(desired signal level) ..... 30 dBf
(two undesired signal level: 100 dBf)

AM tuner

Frequency range
(KEH-P424/X1M/UC, P4700/X1M/UC) .... 530 – 1,710 kHz
(KEH-P4750/X1M/ES) ..... 530 – 1,710 kHz(10kHz)
531 – 1,602 kHz(9kHz)
Usable sensitivity ..... 18 μV (S/N: 20 dB)
Selectivity
(KEH-P424/X1M/UC, P4700/X1M/UC)..... 50 dB (±10 kHz)
(KEH-P4750/X1M/ES) ..... 50 dB (±10 kHz)
50 dB (±9 kHz)

Note:

- Specifications and the design are subject to possible modification without notice due to improvements.